THE

BRITISH ARCHITECT:

OR,

The Builder's Treaſury of STAIR-CASES.

CONTAINING,

I. An eaſier, more intelligible, and expeditious METHOD of drawing the FIVE ORDERS, than has hitherto been publiſhed, by a SCALE of Twelve equal Parts, free from thoſe troubleſome Diviſions called *Aliquot Parts*. Shewing alſo how to glue up their COLUMNS and CAPITALS.

II. Likewiſe STAIR-CASES, (thoſe moſt uſeful, ornamental, and neceſſary Parts of a BUILDING, though never before ſufficiently deſcribed in any Book, Ancient or Modern); ſhewing their moſt convenient Situation, and the Form of their Aſcending in the moſt grand Manner: With a great Variety of curious ORNAMENTS, whereby any Gentleman may fix on what will ſuit him beſt, there being EXAMPLES of all Kinds; and neceſſary DIRECTIONS for ſuch Perſons as are unacquainted with that BRANCH.

III. DESIGNS of ARCHES, DOORS, and WINDOWS.

IV. A great Variety of New and Curious CHIMNEY-PIECES, in the moſt elegant and modern TASTE.

V. CORBELS, SHIELDS, and other beautiful DECORATIONS.

VI. Several uſeful and neceſſary RULES OF CARPENTRY; with the Manner of TRUSS'D ROOFS, and the Nature of a ſplay'd circular SOFFIT, both in a ſtreight and circular Wall, never publiſhed before. Together with Raking CORNICES, GROINS, and ANGLE BRACKETS, deſcribed.

The Whole being illuſtrated with upwards of One Hundred DESIGNS *and* EXAMPLES, *curiouſly engraved by the beſt Hands on Sixty Folio Copper-Plates.*

BY *ABRAHAM SWAN*, CARPENTER.

The SECOND EDITION.

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THE

INTRODUCTION.

THOSE who are well acquainted with this Subject, and have had large Practice in it, muſt, I think, allow that there needs no Apology for preſenting the Public with the enſuing Treatiſe, which is *chiefly* deſign'd for the Benefit of ſuch, as have had leſs Practice therein; to whom I hope it will prove no uninſtructive Piece. Many Books of *Architecture* have been wrote, and ſome of them Pieces of great Value; yet after careful Peruſal I have never found any of them fit to give a Learner tolerable Satiſfaction. And I might venture to ſay, there is no Book yet extant which contains the Rules and Examples of Drawing and Working in ſo large a Variety, and at the ſame Time in ſo plain and conciſe a Manner, as this ſingle Volume.

Palladio, *Scamozzi*, and *Vignola*, are certainly the beſt and moſt celebrated Authors who have wrote on *Architecture*; yet they contain not all that is neceſſary to be known on this Subject; particularly with regard to *Stair-Caſes*, tho' allow'd by them all to be one of the moſt conſiderable and uſeful Parts of a Building. The Examples which they have left us of theſe, are of very little Uſe either for Drawing, or Working. *Palladio* tells us, that all Care imaginable muſt be taken in placing the *Stair-Caſes*; and that it is difficult to find a proper Situation for them, which will no Ways damage the reſt of the *Fabrick*; that the leſs they are concealed from ſuch as enter the Houſe, the more ornamental they will appear; and that you ſhould have a Sight of the beſt Part of the Houſe before you arrive at them, by

which

Thos Vanderdal
his Book 175

which Means the *Fabrick* will ſeem larger than it realy is. With ſuch general Directions he contents himſelf; and pretty much the ſame might be ſaid of *Chimney-Pieces.* But in both theſe Subjects I have laid down ſeveral Rules, and ſhewn ſeveral Examples, which will be found uſeful both for Drawing and Working.

There will be very little Difficulty to underſtand the Proportions of the *Five Orders*; the *Retail* Meaſures being exactly adjuſted by a familiar Scale of Twelve equal Parts; and all the *Groſs* Meaſures, ſuch as thoſe of the *Baſe*, *Shaft*, *Capital*, *Architrave*, *Freeze*, and *Cornice*, are ſhewn up the Sides of the entire Orders, and explained in View of the Deſigns. The *Doors*, *Windows*, *Chimneys*, and the *Decorations*, being fully deſcribed in their proper Places, it would be needleſs to ſay any thing more of them here.

Altho' moſt of the Terms of *Architecture* have been already explained by ſeveral Authors, yet for the Benefit of thoſe who may not have ſuch Books, I ſhall here, beyond what I at firſt propoſed, give their Explication.

An *Order* in *Architecture* ſignifies, a Compoſition of the ſeveral Parts of an *Entire Column*; ſuch as the *Baſe*, *Shaft*, or Body of the Column, the *Capital*, *Architrave*, *Freeze*, and *Cornice*; when theſe are all regulated by their proper Meaſures, ſome being plain, and groſs, others compoſed of more delicate Parts, according to the different Orders for which they are intended, and are all united, and adapted to their proper Places; they then form that Part of a Building, which is called an *Order*; and which adds greatly to the Beauty of the Building, if rightly adapted, not to the Situation *only*, but alſo to the Rank and Dignity of the Owner.

Columns may be called *Entire* without *Pedeſtals*; the chief Uſe of theſe being for *Balluſtrades*, *Obeliſks*, *Statues*, and *Dados* of Wainſcotted Rooms, &c. where they are generally a fifth Part of the Height of the Room; the particular Meaſures of *Pedeſtals* are ſet to the Arches of each *Order*, where, I think they are of little Uſe, except to ſhew their Proportions, for in *Porticos* and *Colonnades*, to which *Columns* are chiefly uſed, we ſeldom find them ſet upon *Pedeſtals*. The *Doric-Order* is ſo far from having a *Pedeſtal*, that in its Original it had no *Baſe*, as *Palladio* has ſhewn in his *Colonnades*; and for this *Vitruvius* gives an odd Reaſon, which is, that this *Order* is like a ſtrong and robuſt Man, ſuch as *Hercules*, who was never repreſented but with his Feet bare;—Whereas the *Baſe* of a *Column* bears more Relation in its Uſe, to a Man's Foot, than to his Shoe; and may therefore be eſteem'd a neceſſary Part.

Of the ſeveral Parts of the Orders *more particularly.*

The Baſe imports the Suſtent or Foot.

In the *TUSCAN ORDER* it is compoſed of three Parts.

The lowermoſt Part is a flat Member, and is called the *Plinth*;

The next is the *Aſtragal*, which is in Form of a Semi-Circle, with its Fillet; this, when uſed in the *Baſe*, is commonly called a *Torus*, which turns round the Column; the ſmall Hollow or Cavity joining to the Fillet belongs to the Column. The firſt third Part of the naked *Shaft*, or Body of the Column, repreſents a Cylinder, the other two, the Fruſtum of a Cone, but ſomething ſwelling; on the uppermoſt Part of the Shaft is an *Aſtragal*, which employed in this Place is called a *Collar*, and turns round the Column.

The next Part is the *Capital*, which begins with a Freeze, here called the *Neck*, at the upper Part of which is a ſmall Hollow, with a ſmall Liſt, or Fillet, which ſeparates it from the *Quarter-Round*, or *Ovolo*. Over the *Ovolo* is a ſquare Plinth, which is in this Place called an *Abacus*, and has ſometimes a ſmall Hollow and Fillet, on the upper Part where it joins ——————

The *Entablature*; The firſt Part of which is called the *Architrave*; this generally conſiſts of two *Faſcias*, above both which is a Fillet with a Hollow underneath it. The next Part is a large plain *Faſcia*, called the *Freeze*, ſeparating the *Architrave* from the *Cornice*.

The firſt Part of the *Cornice* is the *Bed-Mould*, which is compoſed of a Hollow, a Quarter-Round, and Fillets; over this is the *Faſcia*, or Front of the *Soffit*, *Corona*, or *Eaves*, which is ſometimes plain, and ſometimes a large Hollow, as in *Palladio*. At the Top of all is the *Cima* or *Ogee*, with its two Fillets.

An *Ogee* is formed by two Segments of a Circle, the one *Convex*, and the other *Concave*, being ſometimes the ſixth Part of a Circle; but ſometimes a much *quicker* Curve, that is to a ſhorter Radius, eſpecially when uſed for the horizontal, or level Part of the *Cornice*, at the returned Part of the Foot of a *Pediment*; for elſe the *Raking-Ogee* will have a bad Effect.

In the *DORIC ORDER*. The *Baſe* is called the *Attic*, and beſides the *Plinth* is compoſed of two *Toruſſes*; the uppermoſt of which has two Fillets; the Hollow betwixt the *Toruſſes* is ſometimes called the *Scotia*.

The

The *Capital* in this *Order* is ſomething different from the former, having an *Aſtragal*, or *Bead* at the lower Part of the Quarter-Round; *Palladio* ſets to this Part three *Annulets*, Liſts or Fillets. The *Abacus*, or *Faſcia* above the Quarter-Round, has an *Ogee*, and Fillet.

The *Architrave* is compoſed of two *Faſcias*; on the upper are ſix ſmall Drops, or Bells cut like a Dove-Tail, ſet under a Fillet, whoſe Extent is equal to the Width of the *Triglyph* over it. The *Triglyphs* are projecting Parts in the *Freeze*, with perpendicular Channels or Gutters; the Depth of each is formed by a right Angle, and is half the Width. The *Metopes* are the Space between them, which are perfect Squares; the *Triglyphs* are capt with a Fillet.

As for the *Cornice*; the *Bed-moulds* in this *Order* are various. That fix'd to the *Profile* is only a *Quarter-Round* with its Fillet; above this are the *Modillions* capt with an *Ogee*, ſet perpendicularly over the *Triglyphs*, and equal to them in Width; the Spaces in the *Soffit* betwixt the *Modillions*, which often contain various Sorts of Flowers, are called *Coffers*, both in this and the following Orders.

In the *IONIC ORDER*. The *Baſe* nearly correſponds with the former, there being only a *Bead* introduced above the upper *Torus*; the *Capital* is different, for here and in the *following Orders*, the *Quarter-Round* at the upper Part with its Fillet and Hollow is called an *Abacus*; and in the Centre or Middle of this *Capital* is a Pomegranate, from which ſprings the Fillet of the Scroll or *Volute*. Sometimes in this Place you have a Roſe or *Foliage* Flower. The lower *Quarter-Round* is carved with Eggs and Darts.

The

The *Architrave* in this Order has generally three *Faſcias*, which ſome ſeparate by *Beads*, others by the Projection of a ſmall Fillet only, as in the two lower; the upper has a large *Ogee* and *Fillet*, the Carving and Enrichment of which is called *Seven-leaved Graſs*. The *Freeze* has nothing particular, except that it ſometimes ſwells. The *Cornice* has a *Dentil Bed-Mould*; its firſt Member is an *Ogee* with its Fillet, over which are the *Dentils* or Teeth; the next Member is a *Quarter-Round*, or *Ovolo*, with its Fillet; above this is the *Faſcia*, which contains the *Modillions*, capt by an *Ogee*; over this is the *Faſcia*, or Front of the *Soffit*, and then two *Ogees*, with their Fillets.

There is no Occaſion to enlarge upon the two other *Orders*, the *Corinthian* and *Compoſite*; ſince their Mouldings have the ſame Names, as what I have already mentioned. The *Corinthian Capital* has two Rows of Leaves one above another; between the Leaves of the upper Tier is ſhewn the *Helices* or Stalks, from which ſpring the *Scrolls* that ſupport the *Abacus*.

But ſince *Architecture* is much more eaſily learnt by the *Eye*, than the *Ear*, I proceed to explain my Plates, which I ſhall do as briefly as poſſible; the Figures themſelves being much more expreſſive than Words.

To Proportion the

TUSCAN Order.

ANY Height being given for this *Order*,

Let it be divided into nine equal Parts, as is ſhewn up the Side of the *Column*.

Then, one of theſe Parts is the *Diameter* of the *Column* at its *Baſe*; ſeven Parts are given to the *Shaft*, or Body of the *Column*, including the *Baſe* and *Capital*; and two to its *Entablature*, which includes the *Architrave*, *Freeze*, and *Cornice*.

Having found the Diameter of the *Column* at its *Baſe*,

Let it be divided into four equal Parts, as in PLATE II. Then divide one of theſe into twelve, which is done thus;

Take the Extent of one of theſe four Parts, and ſet it from A to B; then ſet your Compaſſes at Pleaſure, and run twelve Diviſions, as on the Line B C; from the Extent of theſe Diviſions draw a Line to A; when theſe Diviſions are ſquared up from the *Baſe Line*, that is, drawing the Perpendiculars 1, 2, 3, *&c.* your Scale is made, and the Line A B is divided into twelve equal Parts; as would eaſily appear by drawing Parallels from each of theſe Perpendiculars to A B.

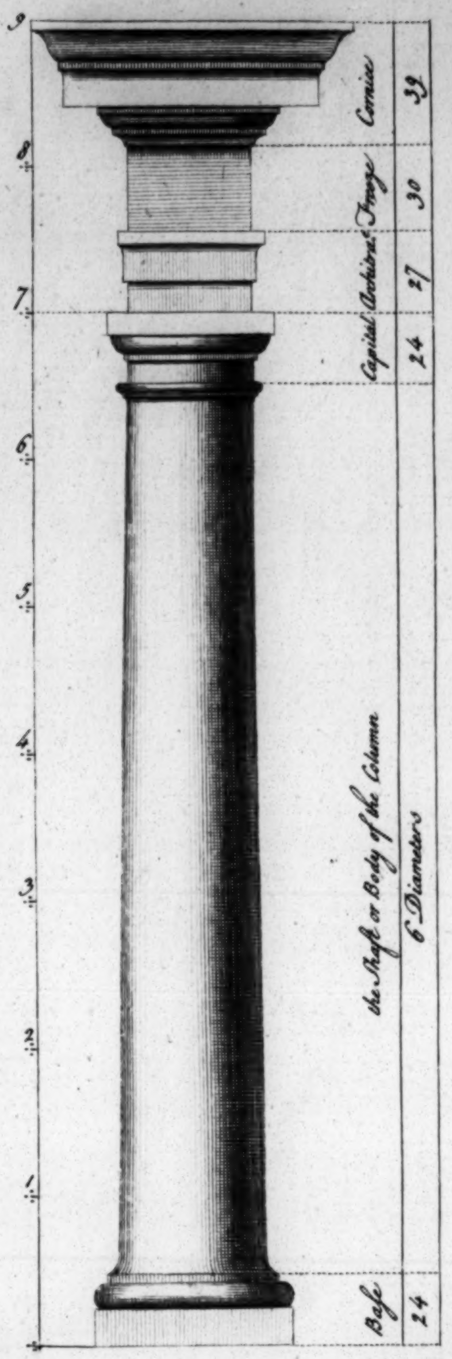
Then diſpoſe of theſe Meaſures to the Height and Projection of each particular Part, as you ſee them ſet in the PLATE, which is all you have to do.

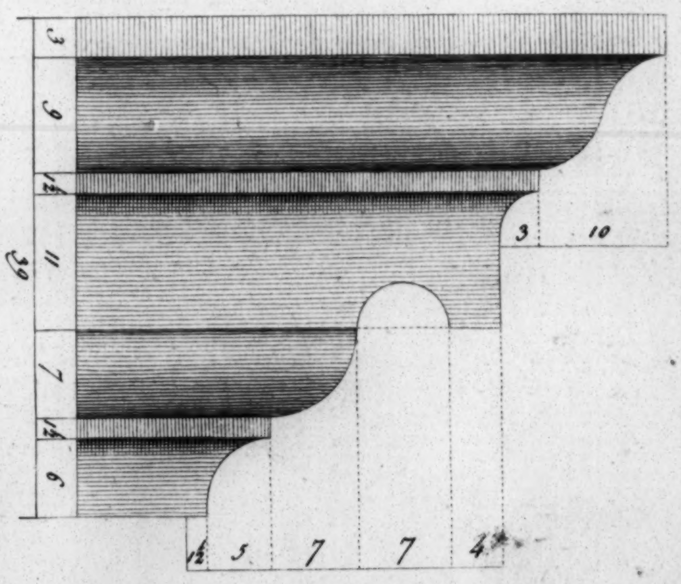
In making the Scale, it is plain, that your Compaſſes may be ſet at any Diſtance; for ſet up C D equal to A B, from D run twelve Diviſions with your Compaſſes at a *ſmaller* Diſtance than before, from their Extent draw a Line to C, and ſquare up from the *Baſe* as before; than theſe Diviſions, if rightly drawn, will exactly anſwer to the former.

When a *Column* happens to be juſt a Foot Diameter, each of theſe Parts will be a Quarter of an Inch, ſince there are forty-eight Quarters in a Foot. When the Diameter is two Feet, each Part will be half an Inch; if four Feet, an Inch; and whether more or leſs, it will be ſhewn by the Scale. Under the *Column* is ſhewn a *Cornice* from *Palladio*.

Plate I

to face Plate II *after Page* XX.

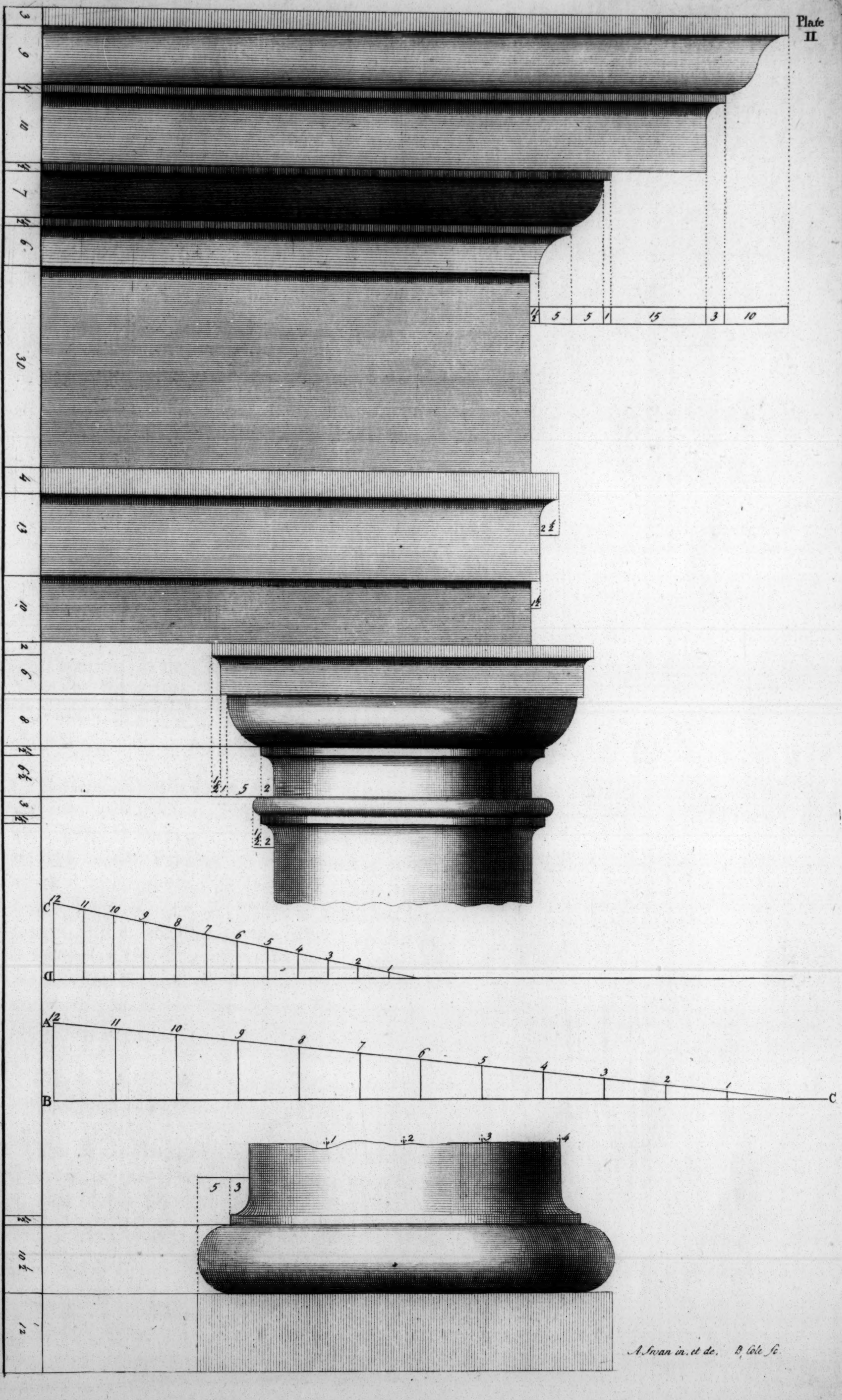




A. Swan inv. et del.

G. Rooker sc.

Plate II


3
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1½
10
1½
7
1½
6
30
4
13
10
2
6
8
1½
6½
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1½
10½
12
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11
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D
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2
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B
C
1
2
3
4
5
3

A. Swan in. et de. B. Cole sc.

To Proportion the

DORIC Order.

THIS Plate exhibits at one View, all the particular Parts of this *Order*, together with ſeveral different *Cornices*, to be uſed as Occaſion may require.

It would be needleſs to ſay any thing more of the *Scale*, ſince 'tis the ſame for all the *Orders*,

Any Height being given for the *Doric Order*, Let it be divided into ten equal Parts, as is ſhewn up the Side of the *Column*.

One of theſe Parts is the *Diameter* of the *Column* at its *Baſe*; eight Parts are given to the *Shaft*, or Body of the *Column*, including the *Baſe* and *Capital*; and two to the *Entablature*; (which always means the *Architrave*, *Freeze*, and *Cornice*.)

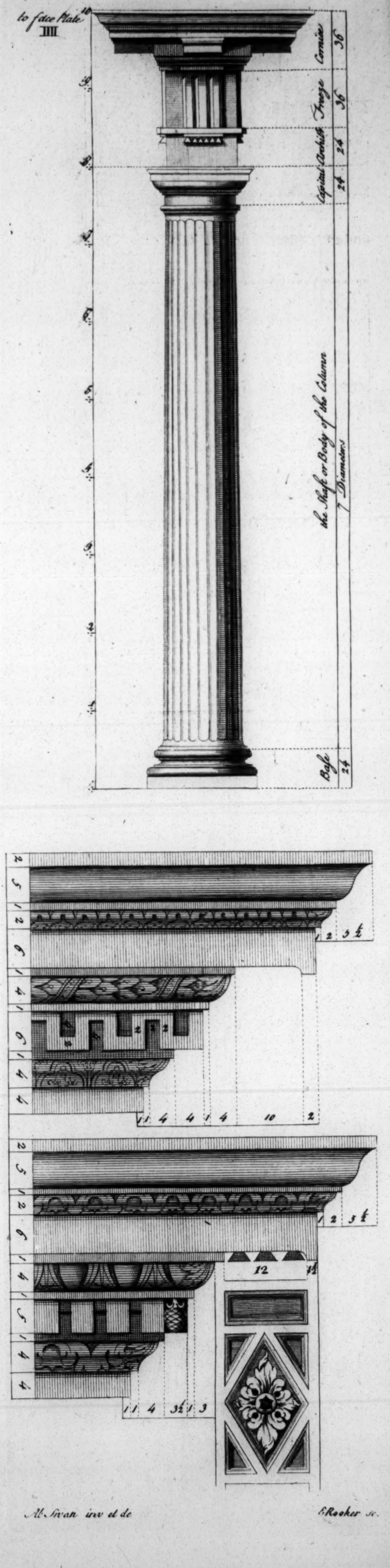
To diminiſh the *Column* —— Let it be divided near the *Baſe*, into ſix equal Parts, as is ſhewn in Plate IV, five of which are to be given to the Top.

If the *Column* is to be *fluted*, it may be divided into twenty-four *Flutes*, of which there are two different Sorts uſed in this *Order*. Thoſe ſhewn on the upper Part are moſt common; they are work'd to an *Arris*, and are ſunk down two different Depths, one of which is deſcribed by the fourth Part of the Circle, the other by a ſixth; as is ſhewn on the Plate to the Right-hand of the *Baſe*: The Square, or *Fillet* of the other Sort, is equal to one third Part of the *Flute*, as in the following *Orders*.

PLATE V. Shews the *Baſe*, *Architrave*, and *Cornice* at large.

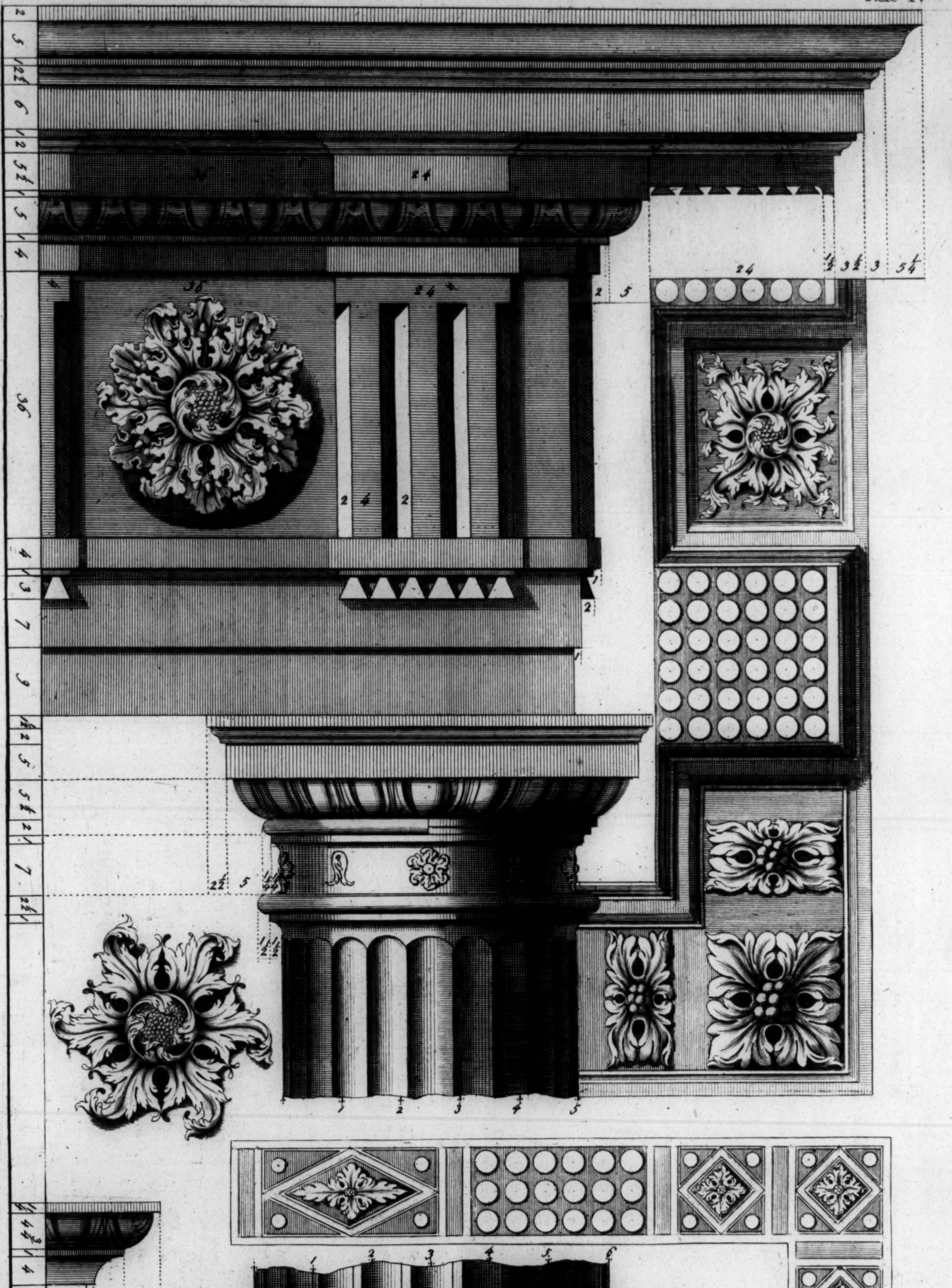
The *Scale* there exhibited is two Inches and a Quarter, which gives the Proportion of a *Column* of nine Inches *Diameter*.

Plate III


to face Plate IIII
10
9
8
7
6
5
4
3
2
1
Cornice 36
Freeze 36
Architrave 24
Capital 24
the Shaft or Body of the Column 7 Diameters
Base 24
1 2 3½
1 4 4 1 4 10 2
12
1 2 3½
1 1 4 3½ 1 3

Al. Swan inv et de. E. Rooker sc.

Plate IV



2
5
2½
6
½2
2
5½
5
4
36
4
3
7
9
½2
5
5½
2
7
2½
4¾
4
4½
3½
6
8
36
24
24
2 4 2
2 5
24
¼ 3½ 3 5¼
2
2½ 5 4½
1 2 3 4 5
1 2 3 4 5 6
3½ 2½ 2½
3½ 4½

A Swan inv et de.

C Rooker sculp.

OF THE

ORDERS
IN GENERAL.

The *TUSCAN* Order.

PLATE I. Repreſents the principal Parts of this Order.

PLATE II. Exhibits each particular Part at large.

The *Baſe*, *Capital*, *Architrave*, and *Cornice* are near *Palladio*'s Proportions; but the *Freeze* is nine Parts more than his, and ſo make the whole *Entablature* equal to two Diameters, and alſo equal to two Sevenths of the Height of the Column. The Height of *Scamozzi*'s *Freeze* exceeds that which is exhibited in this *Profile* by one Part and a Quarter.

The *DORIC* Order.

PLATE III. Repreſents the principal Parts of this Order.

PLATE IV. Shews each particular Part at large, with two different Sorts of *Coronas*, or *Soffits*; one with its *Modillions* and *Flowers*; the other is what both *Palladio* and *Scamozzi* copied from the Theatre of *Marcellus* at *Rome*; and on the Left-hand of this is *Palladio*'s *Bed-mould*; which is all the conſiderable Difference in this Order.

Scamozzi gives a *Dentil-Bed-mould*, the Meaſures of which are placed to the lower *Cornice* in PLATE III. The *Cornice* over this has a *Frett Bed-mould*, taken from the Bath of *Diocleſian*, at *Rome*.

PLATE V. Exhibits the *Mouldings* at large, in Out-lines.

The *IONIC* Order.

PLATE VI. Repreſents the principal Parts of this Order.

PLATE VII. Repreſents each particular Part at large.

The *Modillions* fix'd to the *Profile*, with the Leaves underneath them, have been practiſed by Sir *Chriſtopher Wren*, with the *Bed-mould* in the ſame Proportion as here exhibited, but not toothed. The ſame PLATE alſo exhibits *Palladio*'s *Cornice*, with the *Modillions* finiſh'd ſtrait behind; his *Bed-mould* is the ſame here as that which he has given to the *Doric* Order: The Height which he aſſigns to the *Freeze* in this Order is twenty-one Parts, and it ſwells equal to the Projection of the *Architrave*.

PLATE VIII. Shews the *Gluing* up of the *Capital*.

PLATE IX. Exhibits the *Mouldings* at large, in Out-lines.

The *CORINTHIAN* Order.

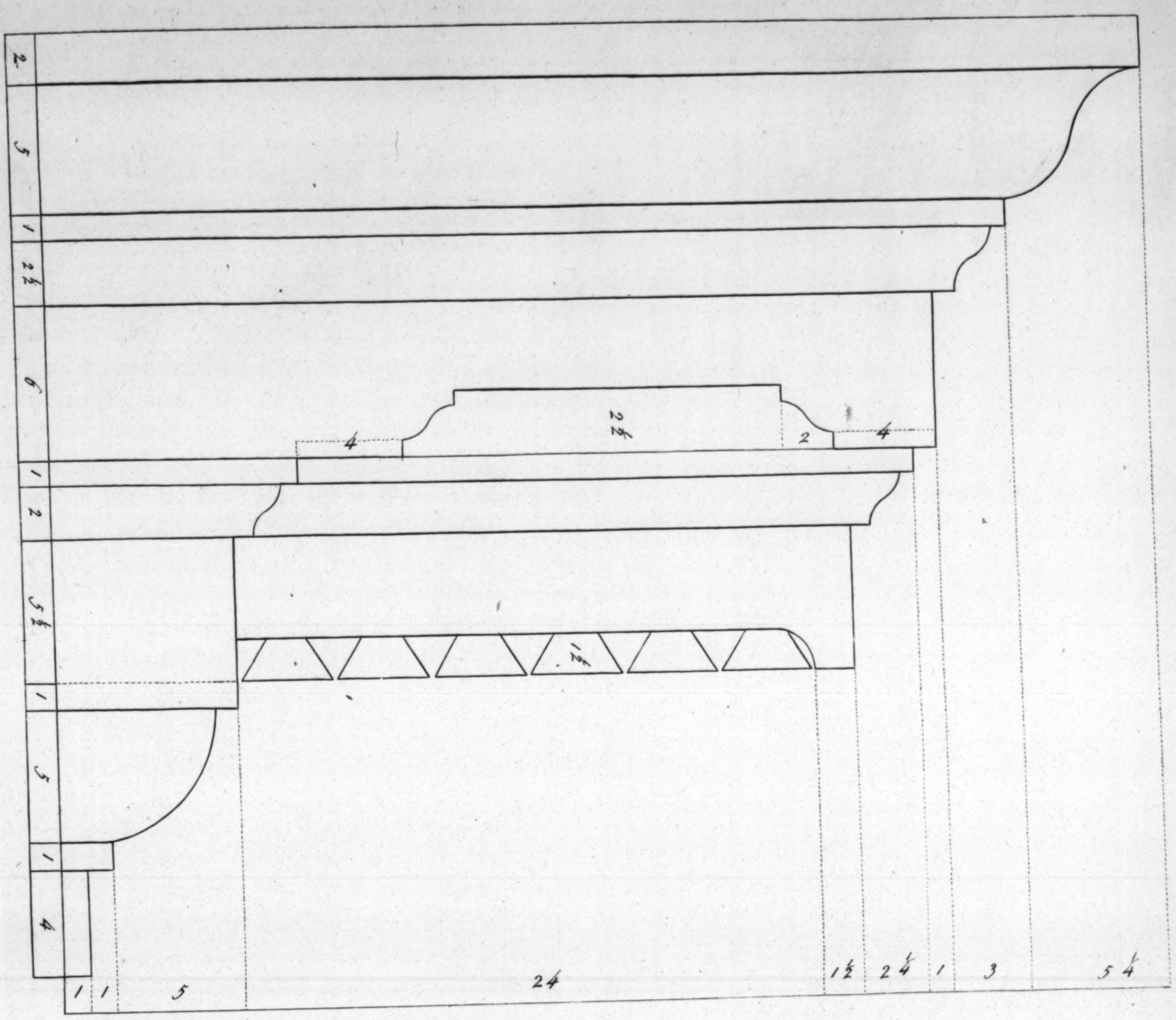
PLATE X. Repreſents the principal Parts of this Order.

PLATE XI. Exhibits each particular Part at large.

The *Modillion* placed to this *Profile*, is ſhorter than *Palladio*'s, by two Parts and a Half, and ſeems to have a much better *Truſs*; ſince his is longer in Proportion, than any that we find among the Ancients, who certainly did nothing without the greateſt Reaſon. *Palladio*'s *Freeze* to this Order is twenty-five Parts. The Height of the Column in this Order is equal to ten of its Diameters; and the *Entablature* to two, or to one fifth Part of the Column's Height.

PLATE XII. Shews the *Gluing* up of the *Capital*.

PLATE XIII. Exhibits the *Mouldings* at large, in Out-lines.


2
5
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2½
6
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2
5½
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24
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2¼
1
3
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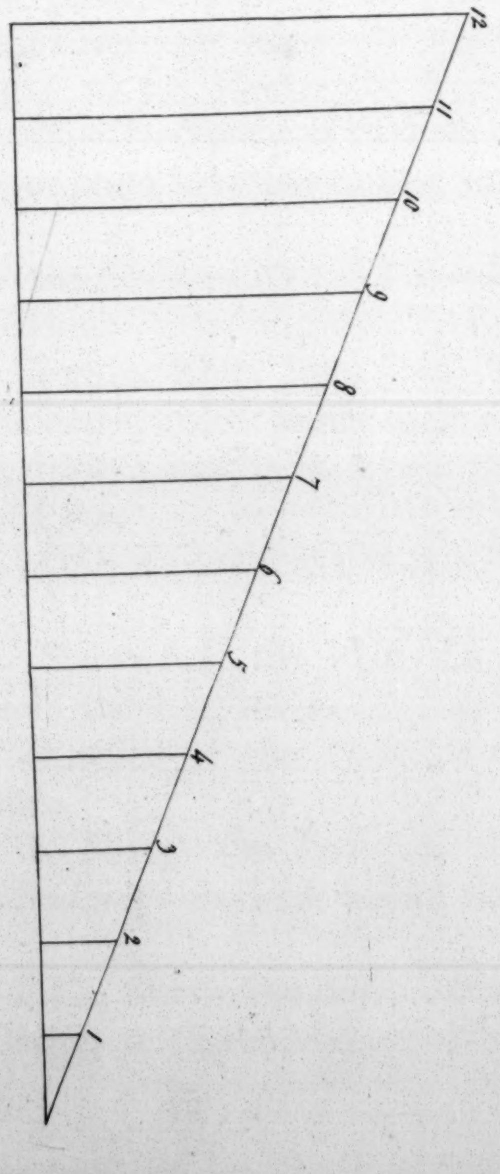
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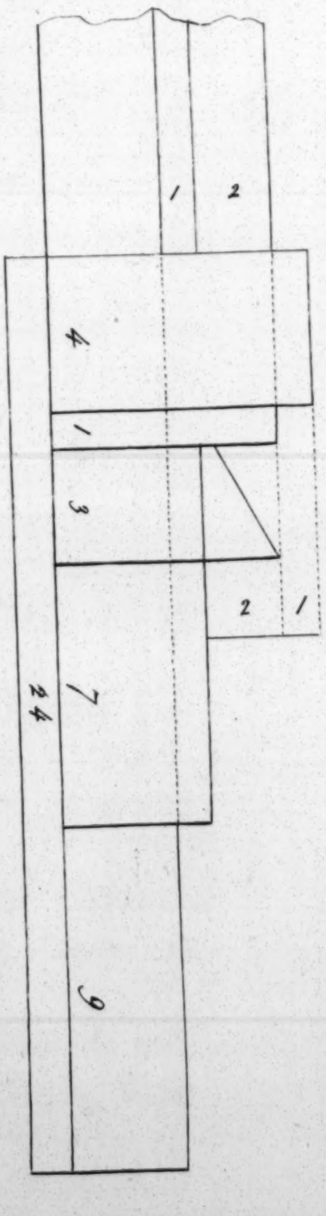
1


1
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2
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24
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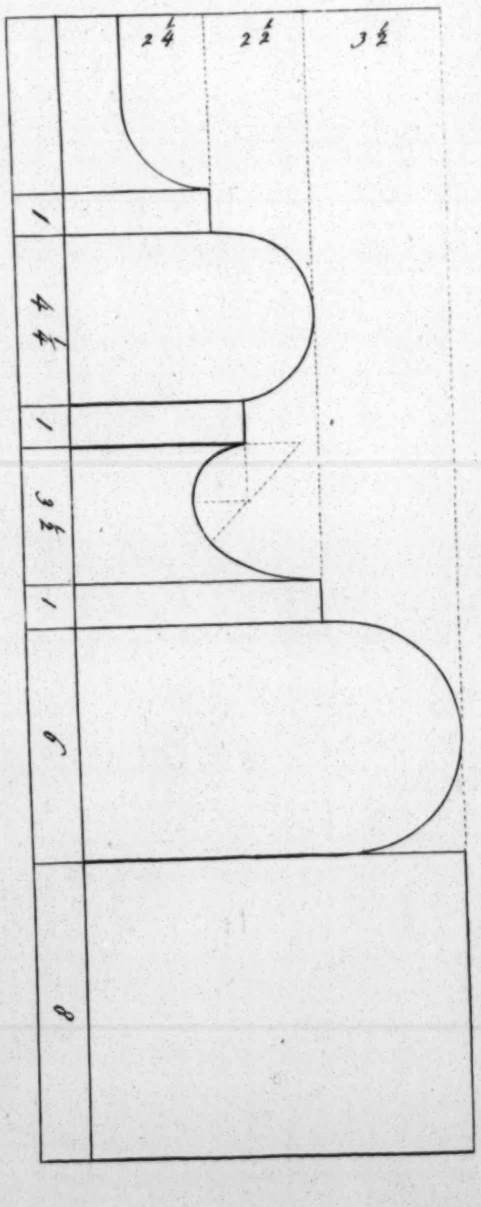
9


2¼
2½
3½
1
4½
1
3½
1
6
8

Ab Swan in et de.

E Rooker sculp.

To PROPORTION the

IONIC Order.

ANY Height being giving for this *Order*, Let it be divided into eleven equal Parts, as is ſhewn up the Side of the *Column:* One of them is the *Diameter* at the *Baſe*.

Nine Parts are given to the *Shaft*, including the *Baſe* and *Capital*, and two to the *Entablature*.

You have here four different Sorts of *Cornices* for this *Order*, and two different Sorts of *Modillions*; the one turned up behind, like the *Corinthian*, ſometime with a *Scroll* and *Leaf* behind, and a *Leaf* on the under Side, ſet within a ſmall *Liſt*, or *Fillet*; and the other is from *Palladio*.

PLATE VIII. Shews all the Parts of the *Capital*.

FIG. I. Shews a *Capital*, with an *Ogee-Abacus*.

FIG. II. A different *Capital*, with the *Scrolls* touching the *Ovolo*.

FIG. III. The Plan of a *Capital*, with its *Scroll* on one Corner; the dotted Lines on the other Corner ſhew the Thickneſſes of the Pieces to be glued on.

FIG. IV. Shews the Body of the *Capital*.

FIG. V· Shews the *Scroll*;——To draw which, take the Diſtance from 2, to the Centre in your Scale, FIG. VIII. ſet the Compaſſes at 1, in FIG. V. and deſcribe a Stroke at C, with the ſame Diſtance from 2, croſs the former Stroke in C, and this will be the Centre to turn that Part from 1 to 2; and ſo proceed with the reſt, taking the ſeveral Diſtances from the Scale, in which, the Diſtances from 1 to the Centre, or from 2 to the Centre, are reſpectively equal to thoſe of from 1 to the Centre, or from 2 to the Centre in the *Scroll*, and ſo on.

To make the Scale in FIG. VIII.——The Baſe Line contains nine Parts, and the Upright twelve; Divide the Circular Line, from FIG. VIII. to the *Eye* of the *Volute*, into twenty-four equal Parts, thro' which draw Lines from where they meet to the Upright Line.

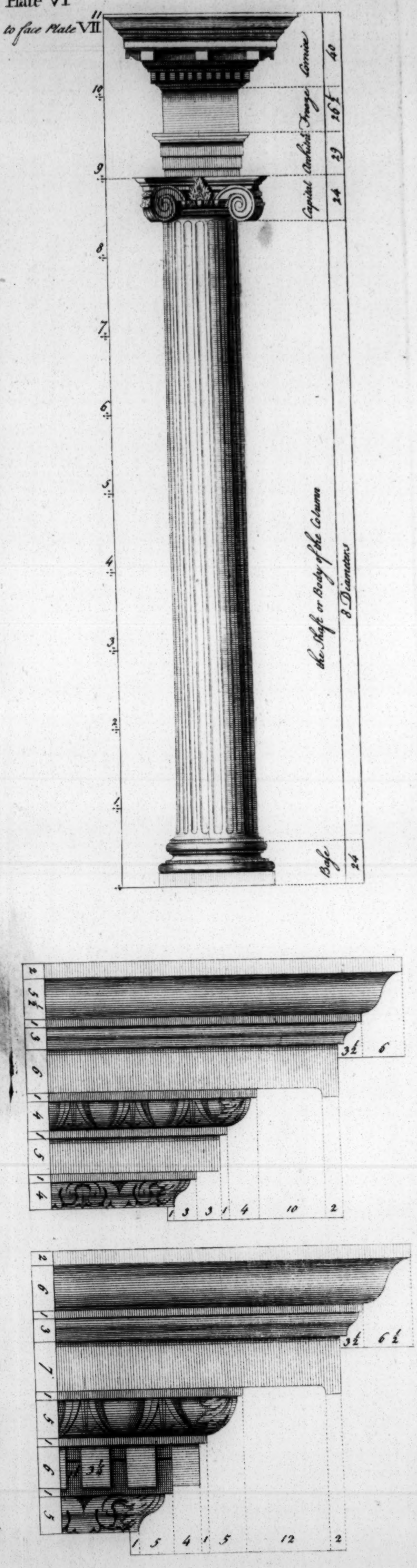
The *Eye* of the *Volute* contains two Parts and an Half.

FIG. VI. Shews half the Plan of a *Square Capital*, wherein the Figures 1, 2, 3, 4, 5, 6, repreſent the Thickneſſes of the Pieces to be glued on to the Corners.

FIG. VII. Shews the Body of the *Capital*, with the *Mouldings* worked before the Pieces are glued on.

PLATE IX. Shews the *Baſe*, *Architrave* and *Cornice* at large, with the Manner of forming their *Modillions*.

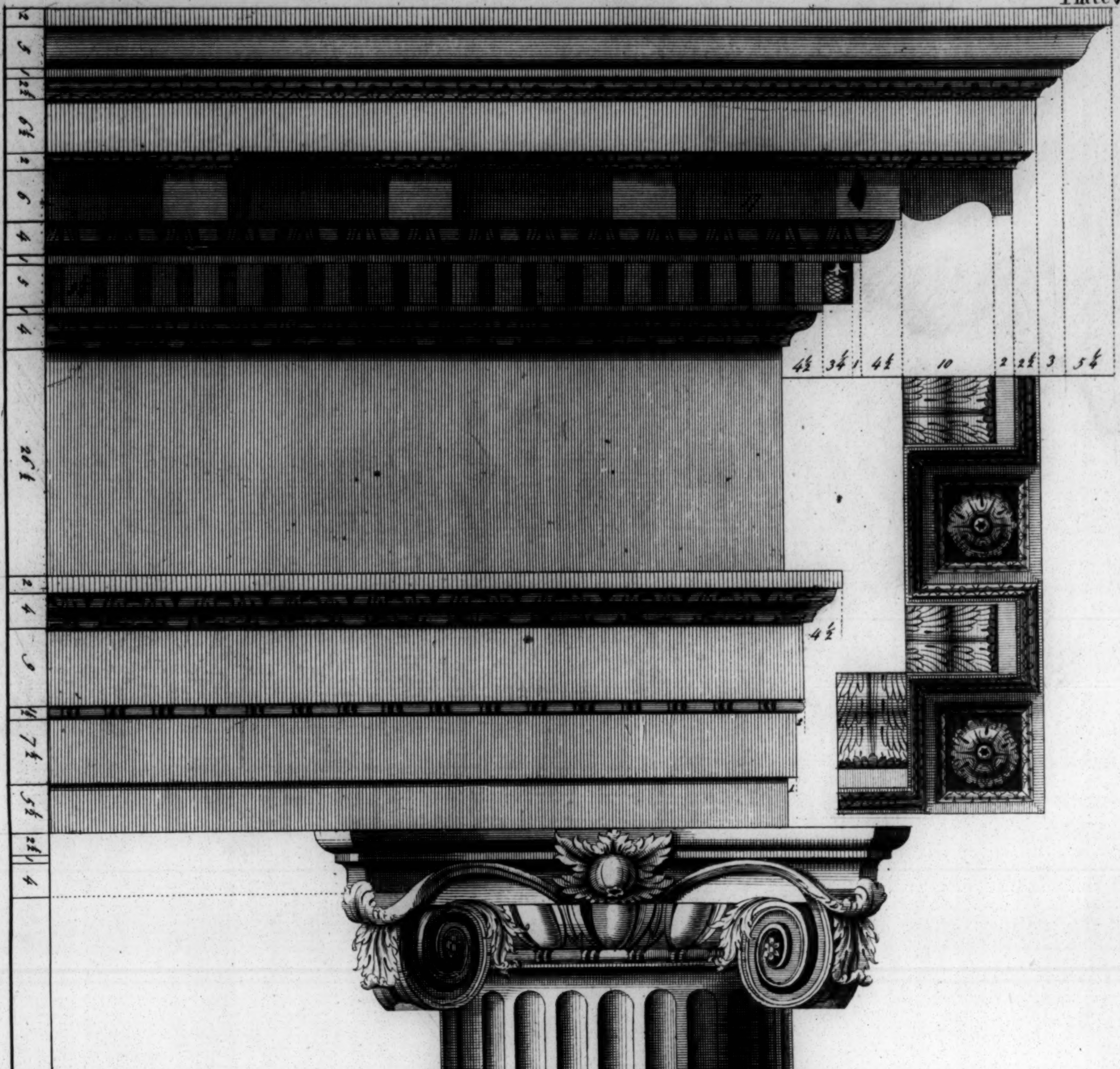
Plate VI
to face Plate VII



A Swan in et de

G Rocker sc.

Plate VII



4½ 3¼ 1 4½ 10 2 2½ 3 5¼
4½
1 2 3 4 5
3½ 6½
1 3½ 4½ 10 2 2½ 2½ 1
1 2 3 4 5 6
3½ 2 1½ 2

Ab. Swan inv. et de.

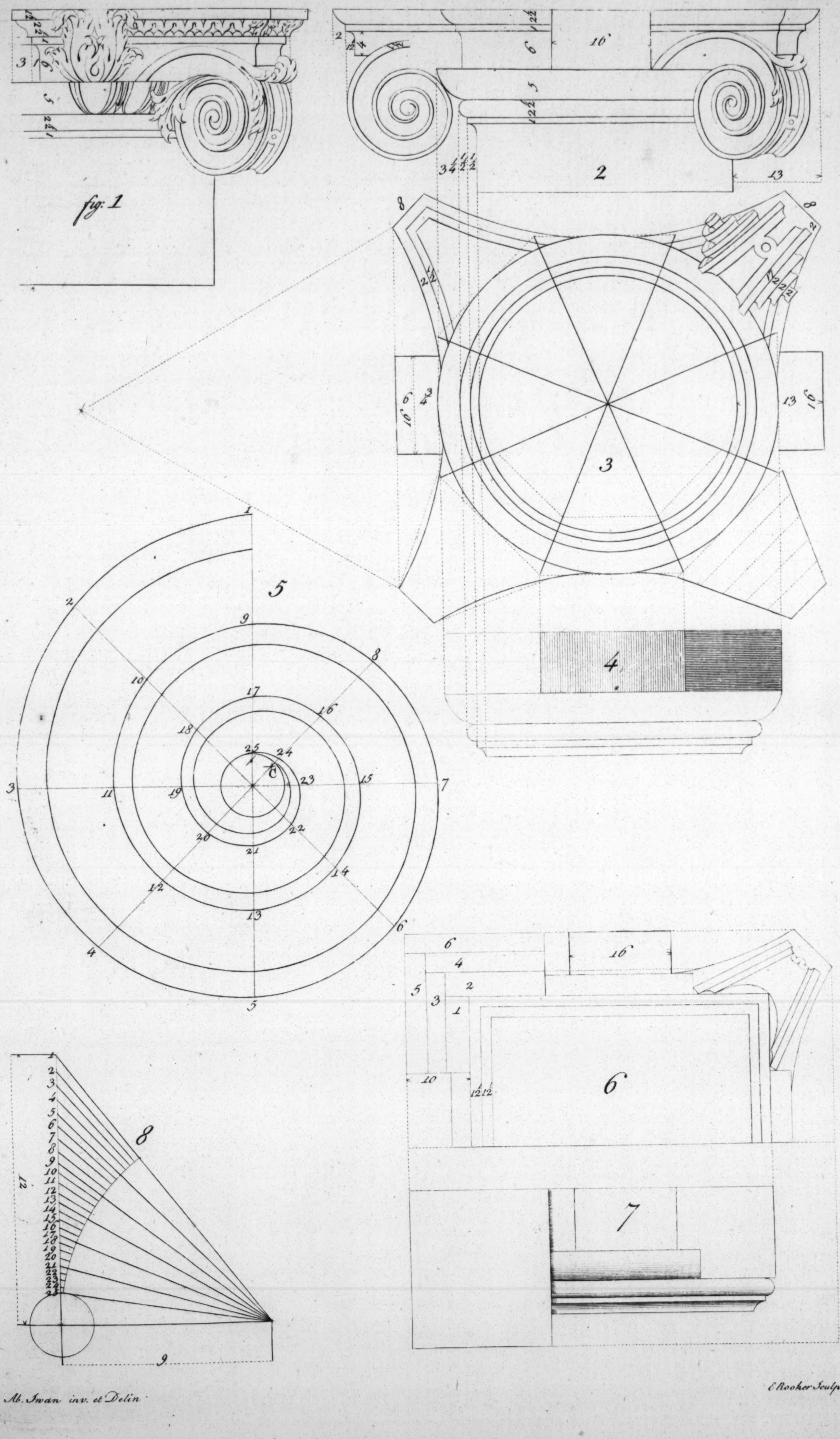
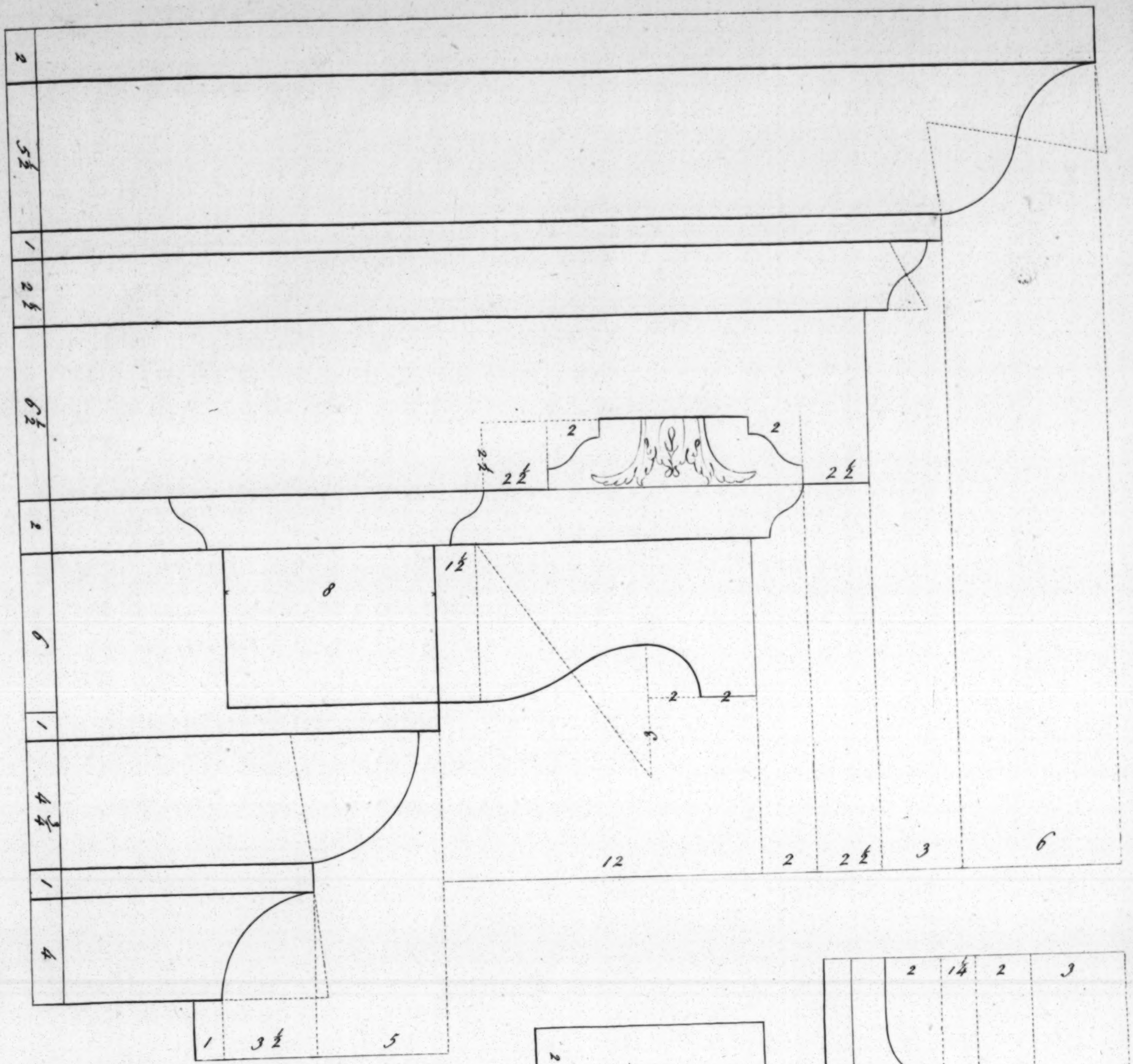
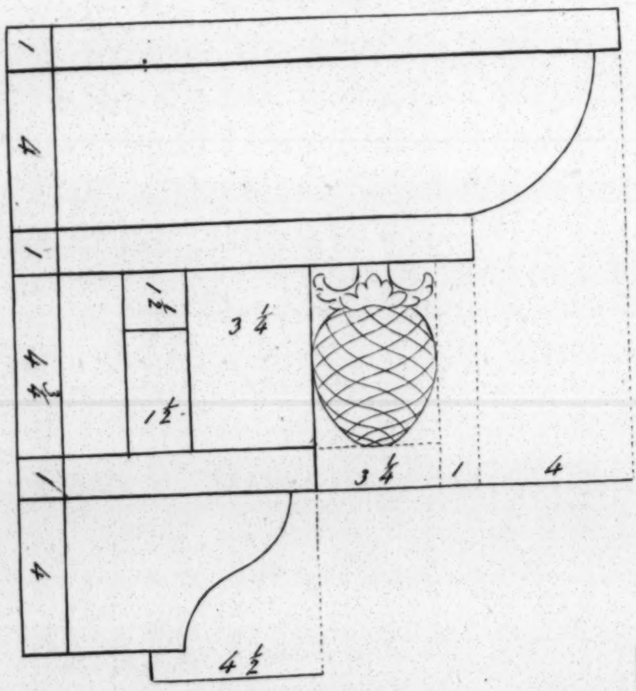


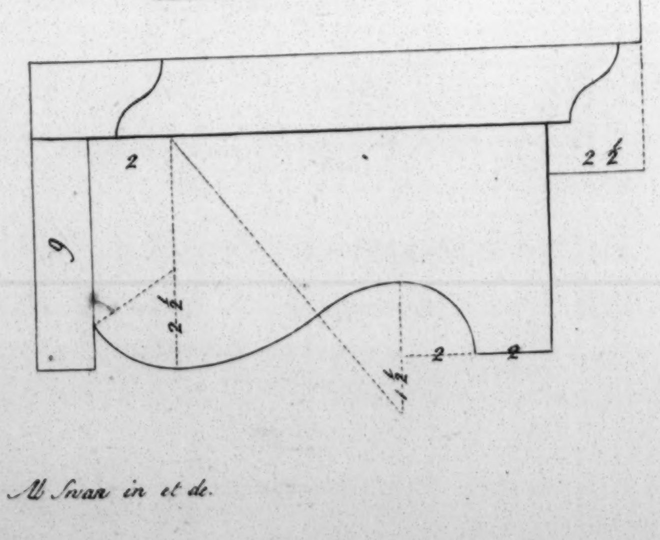
fig: 1
2
3
4
5
6
7
8
16
13
10
12
9
C

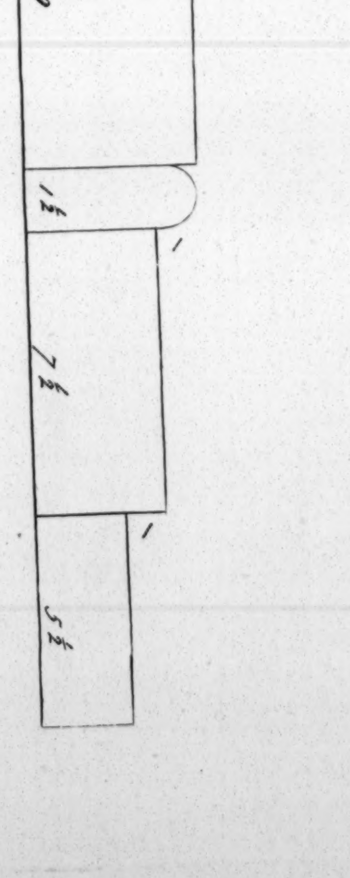
Ab. Swan inv. et Delin

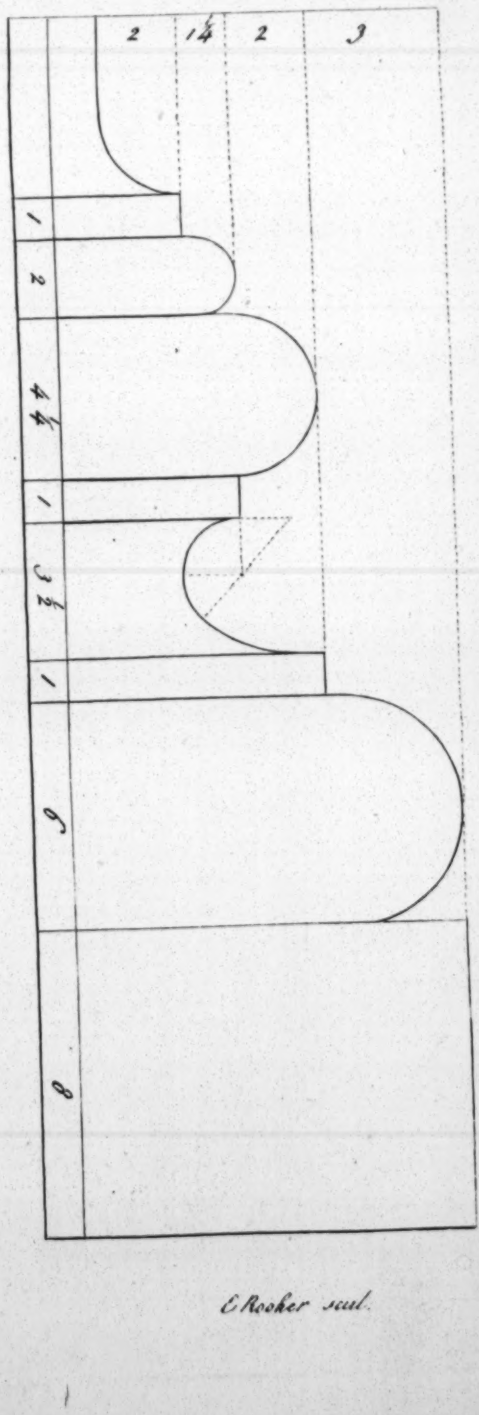
E. Rooker Sculp.


2
5½
1
2½
6½
2
9
1
4¾
1
4
8
1½
2
2
9
2½
2½
2
2
2½
1
3½
5
12
2
2½
3
6


1
4
1
4¾
1¼
1½
3¼
3¼
1
4
1
4
4½


2
2½
9
2½
1½
2
2


2
4
4
9
1½
1
7½
1
5½


2
1½
2
3
1
2
4¼
1
3½
1
9
8

Ab. Swan in et de.

E Rooker sculp.

To Proportion the

CORINTHIAN Order.

ANY Height being given for this *Order*,

Let it be divided into twelve equal Parts, as is ſhewn up the Side of the *Column.*

One of them is the *Diameter* of the *Column* at the *Baſe*; Ten Parts are given to the *Shaft*, including the *Baſe* and *Capital*; and two to the *Entablature.*

The *Capital* in this *Order* is one *Diameter* and a ſixth Part.

This PLATE alſo exhibits another *Cornice* larger than that fixed to the *Profile*, but yet is not near ſo large, as that which *Vignola* has given to his *Corinthian.*

'Tis not neceſſary to ſay any more of the Proportions, the Meaſures being ſet to the reſpective Parts.

PLATE XII. Shews the different Parts of the *Capital.*

FIG. I. Shews the Pieces glued upon the *Diagonal.*

FIG. II. Shews the *Capital* viewed Angle-ways, with Part of the naked *Bell* of the *Cap.*

FIG. III. Repreſents the Body of the *Capital*, with ſome of the *Blocks* glued on; FIG. II. at the upper Corner to the Left ſhows how much the *Capital* ſhould taper, at each Side, ſince ſeven and an Half on the other Side is ſcarce ſufficient for the Plan of the *Abacus.*

FIG. IV. Shews the *Capital*, with all the Meaſures of the Height, Width, and Projection ſet to every Part.

FIG. V. Shews the Plan of the *Capital*, with the Manner of *Reverſing* the *Cants*, for gluing on the lower Teer of Leaves.

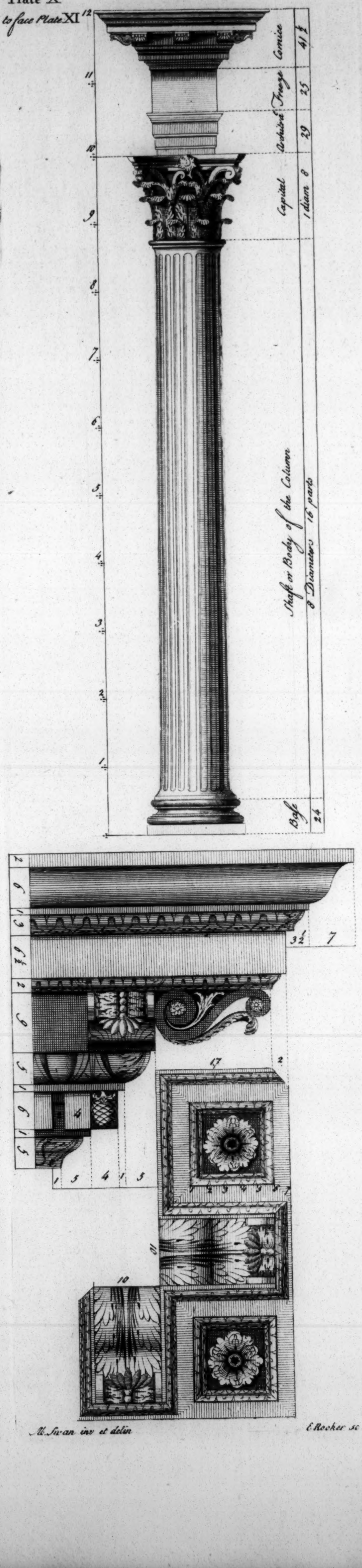
FIG. VI. Shews half the Front of a *Square Capital.*

FIG. VII. Shews the Plan of a *Capital*, one Part Circular, and the other Square, with the Manner of ſetting out the *Flutes*, and *Leaves* of each.

PLATE XIII. Shews the *Caſe*, *Architrave*, and *Cornice* at large, drawn by the ſame Scale as the *Doric* and *Ionic.*

Plate X

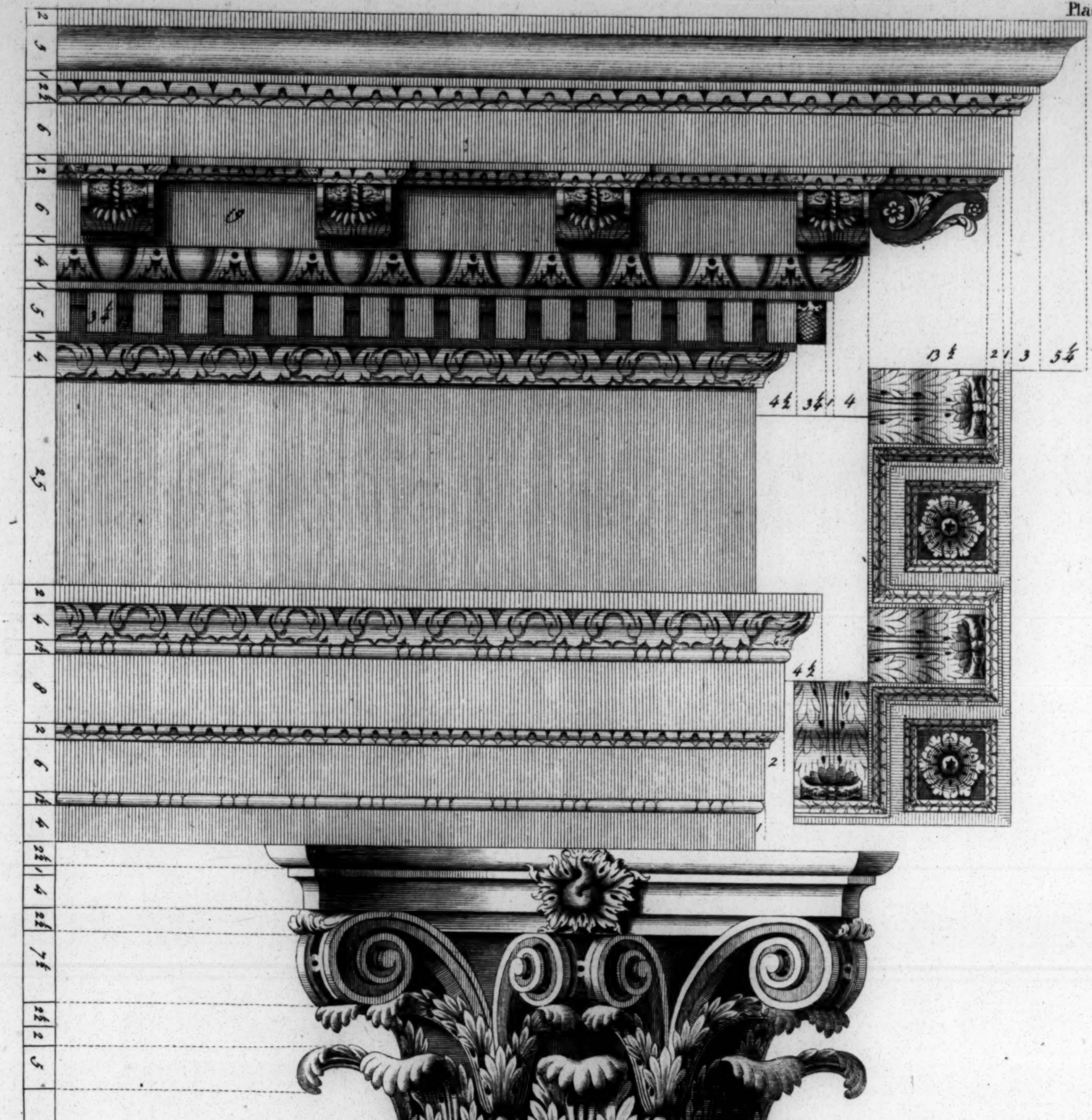
to face Plate XI



M. Swan inv et delin

E. Rooker sc

Plate XI



13½
2
1
3
5¼
4½
3¼
1
4
4½
2
1
2¼
1
2
1
3
25
12
5
12
7

Ab. Swan in. et delin

Edw: Rooker sculp.

Plate XII

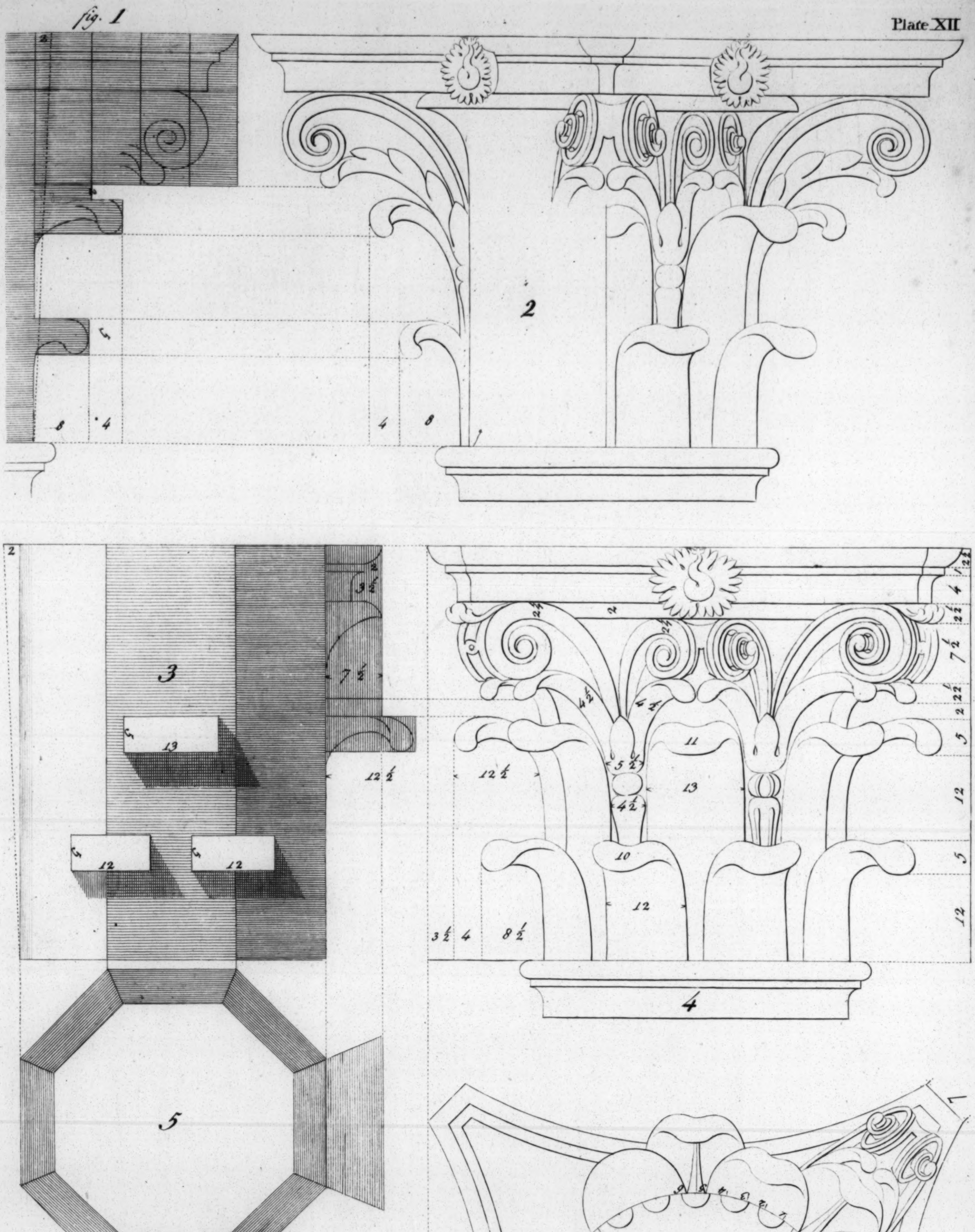
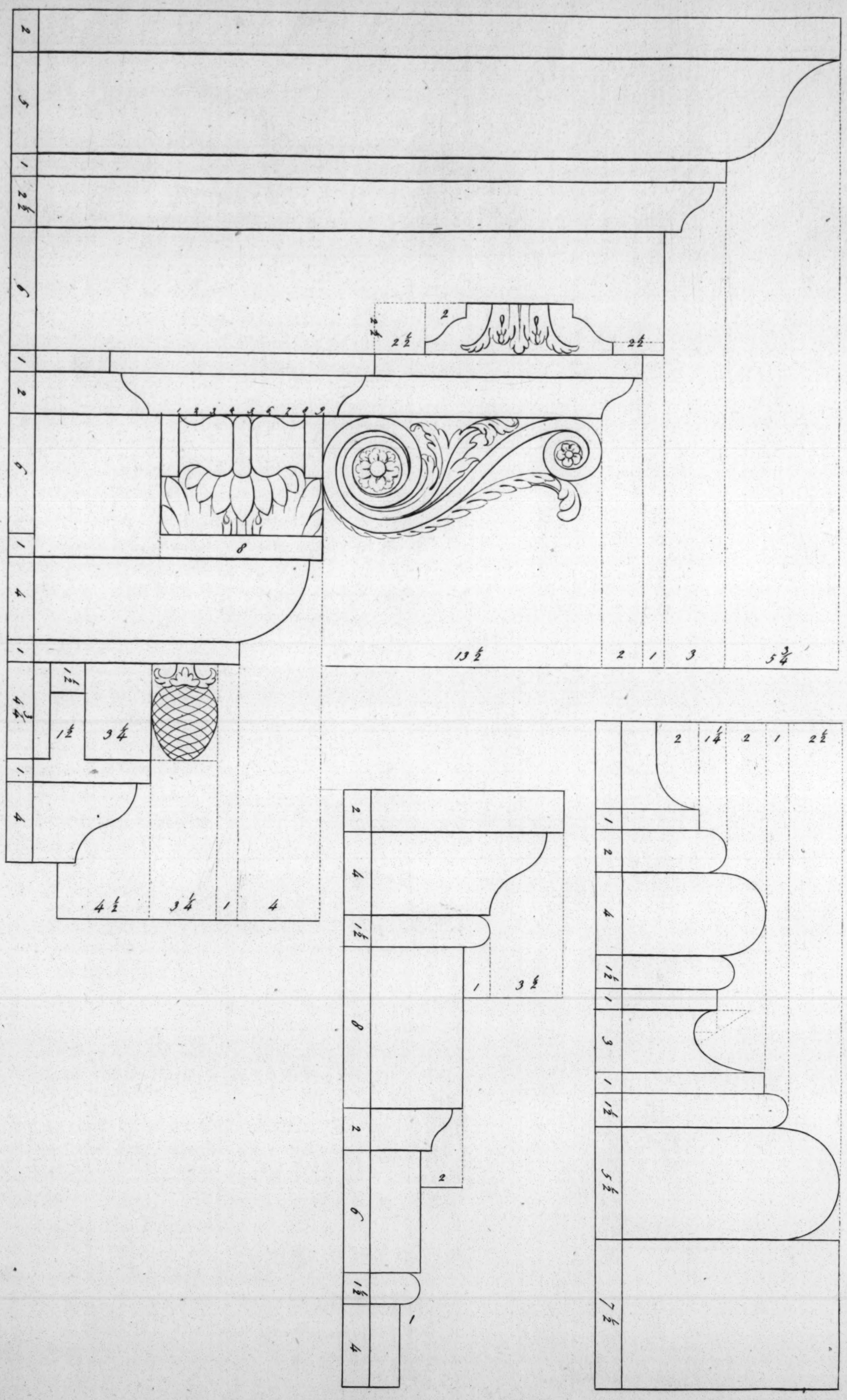


fig. 1
2
3
4
5
6
7
8
4
4
8
3½
7½
12½
13
12
12
12½
2
2½
4½
4½
5½
4½
11
13
10
12
3½
4
8½
4
2½
7½
2
22
5
12
5
12
12
2
3½
7½
16
1
2
3
4
5
6
7
8
9
10
11
12
13
14

Al. Swan inv. et Delin.

E. Rooker Sculp.

Plate XIII


2
5
1
2½
9
1
2
9
1
4
1
4½
1½
1½
3¼
1
4
8
2
2½
2½
1 2 3 4 5 6 7 8 9
13½
2
1
3
5¾
4½
3¼
1
4
2
4
1½
1
3½
8
2
2
6
1½
1
4
2
1¼
2
1
2½
1
2
4
1½
1
3
1
1½
5½
7½

Ab. Swan in et de

E Rooker sculp.

To Proportion the

COMPOSITE *Order.*

ANY Height being given for this *Order*, Let it be divided into twelve Parts, as the *Corinthian*, there being no Difference in the *Original* betwixt theſe two, except in the *Capital*, the *Compoſite* having a proper *Ionic Capital* above the *Leaves*; theſe *Leaves* commonly differ from the *Corinthian*, being carved with what is call'd *Parſley*.

There are Two different *Cornices*; one of them has an *Architrave-Modillion*, which *Palladio* and *Scamozzi* copied from a *Corinthian* Work at *Rome*, call'd the *Frontiſpiece* of *Nero*, from which they both took their *Ionic Baſe*.

PLATE XVI. Shews the Manner of *Gluing* and *Fluting Columns*, which may be uſeful to thoſe who have had but little Practice in this Way.

FIG. I. Shews a *Column* in the *Reel*; the Pieces at each End on which the *Column* hangs, have their upper Ends left level with the upper Side of the *Column*, that when a ſtraight Rule is laid on thoſe two Pieces, and FIG. VI. placed to the Bottom of the *Column*, and FIG. VII. to the Top, with the *Flutes* and *Fillets* drawn on each of them, then Lines drawn by the Rule from the Bottom to the Top, will ſwell, and diminiſh your *Flutes*.

FIG. II. Shews a *Pilaſter*, with two *Gages*; one to gage from a ſtraight Side, and the other to gage one that diminiſhes: It will be ſufficient to put in *Teeth* for three *Flutes*, and gage from each Side, for when there are more, 'tis difficult to run the *Gage* true.

FIG. III. Shews two Ribs glued together.

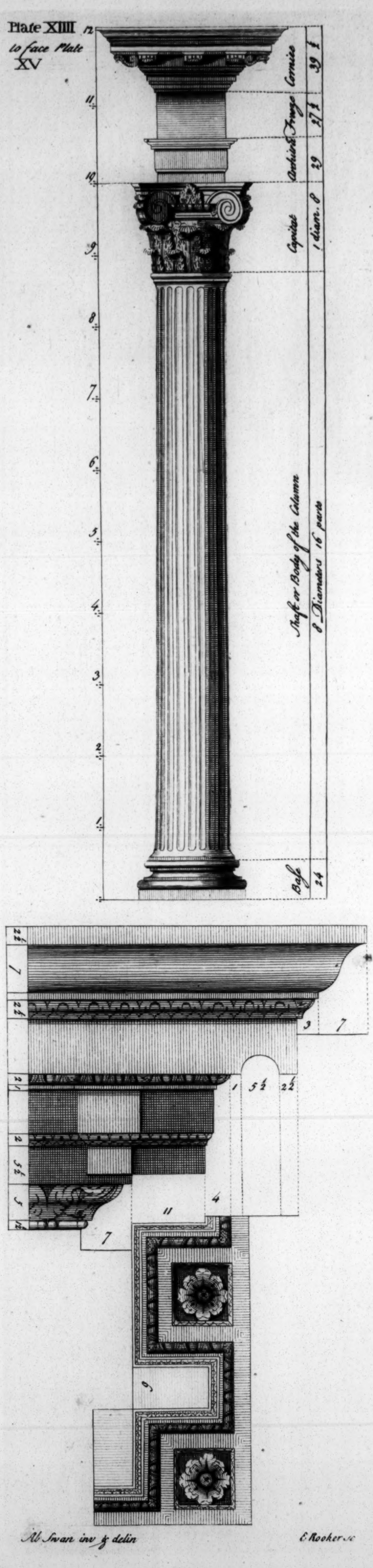
FIG. IV. Shews a *Column* glued up.

FIG V. Shews the Rule, for diminiſhing the Ribs, before they are glued together. Sometimes when the Stuff is thin, each Rib is fix'd to a *Templet*, and bent near to the ſwelling of the *Column*, and ſo glued two and two together. To diminiſh the *Column*, divide the Height into ſeven Parts; at two of thoſe Parts ſtrike a Semi-circle; then draw the dotted Lines from the Neck of the *Column* to the Semi-circle; divide the remaining Part of the Semi-circle into four equal Parts, where theſe cut the Semi-circle, they will give the diminiſhing Parts, as is ſhewn up the Side of the *Column*, by the Figures 1, 2, 3, 4.

FIG. VI. Shews the *Splaying Mould* of the Ribs, and the *Backing Mould*.

FIG. VII. Shews two *Flutes* in a Rib. You are always to obſerve, that the *Flutes* happen not in the *Joints*.

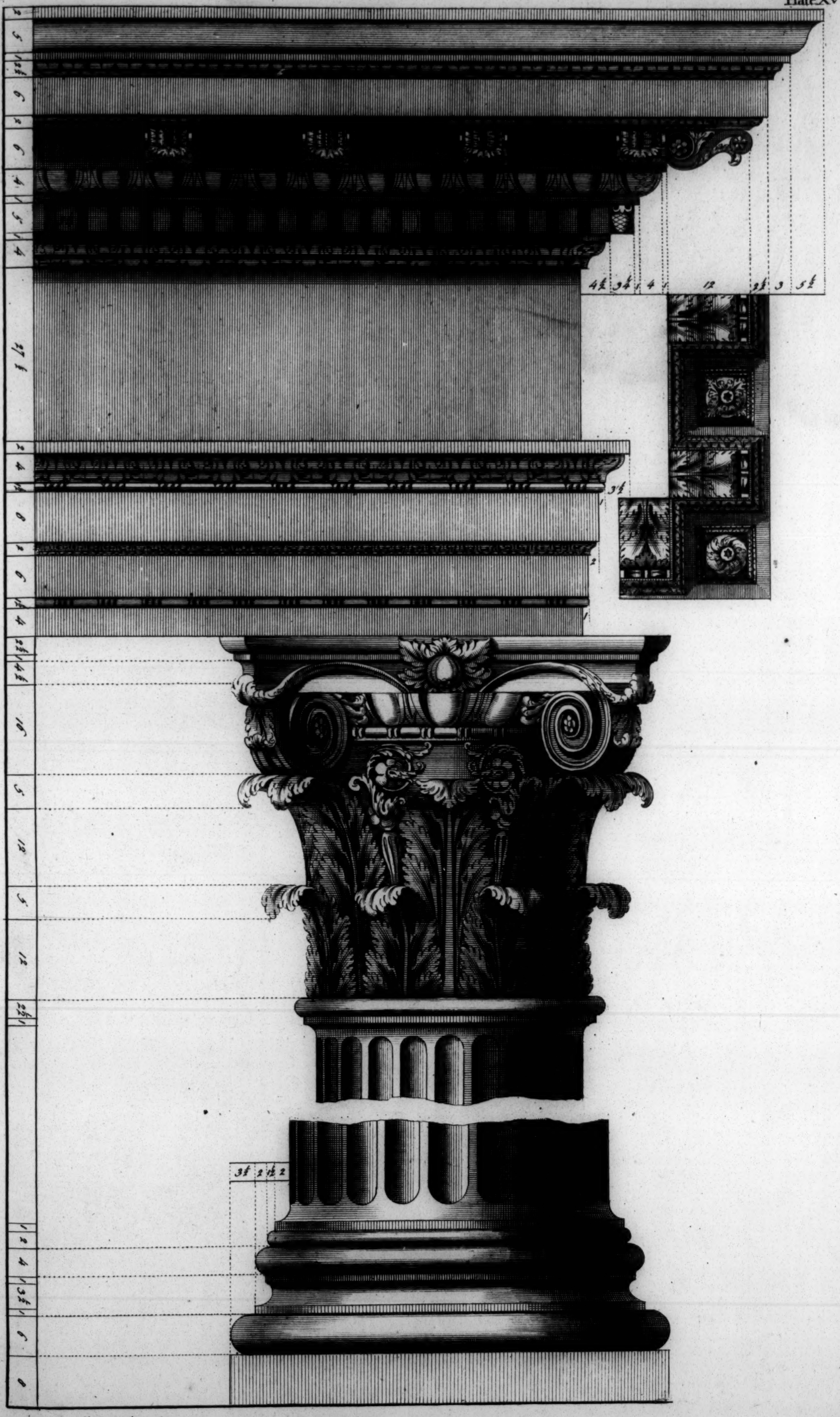
Plate XIIII
to face Plate
XV



Ab Swan inv & delin

E Rooker sc

Plate XV


2
5
1
2½
6
2
6
4
1
5
1
4
27½
2
4
½
8
2
6
½
4
2½
1
4½
10
5
12
5
12
2½
1
1
2
4
1
3½
1
6
8
4½
3½
1
4
1
12
3½
3
5½
3½
1
2
1
3½
2
1½
2

Ab Swan in et de.

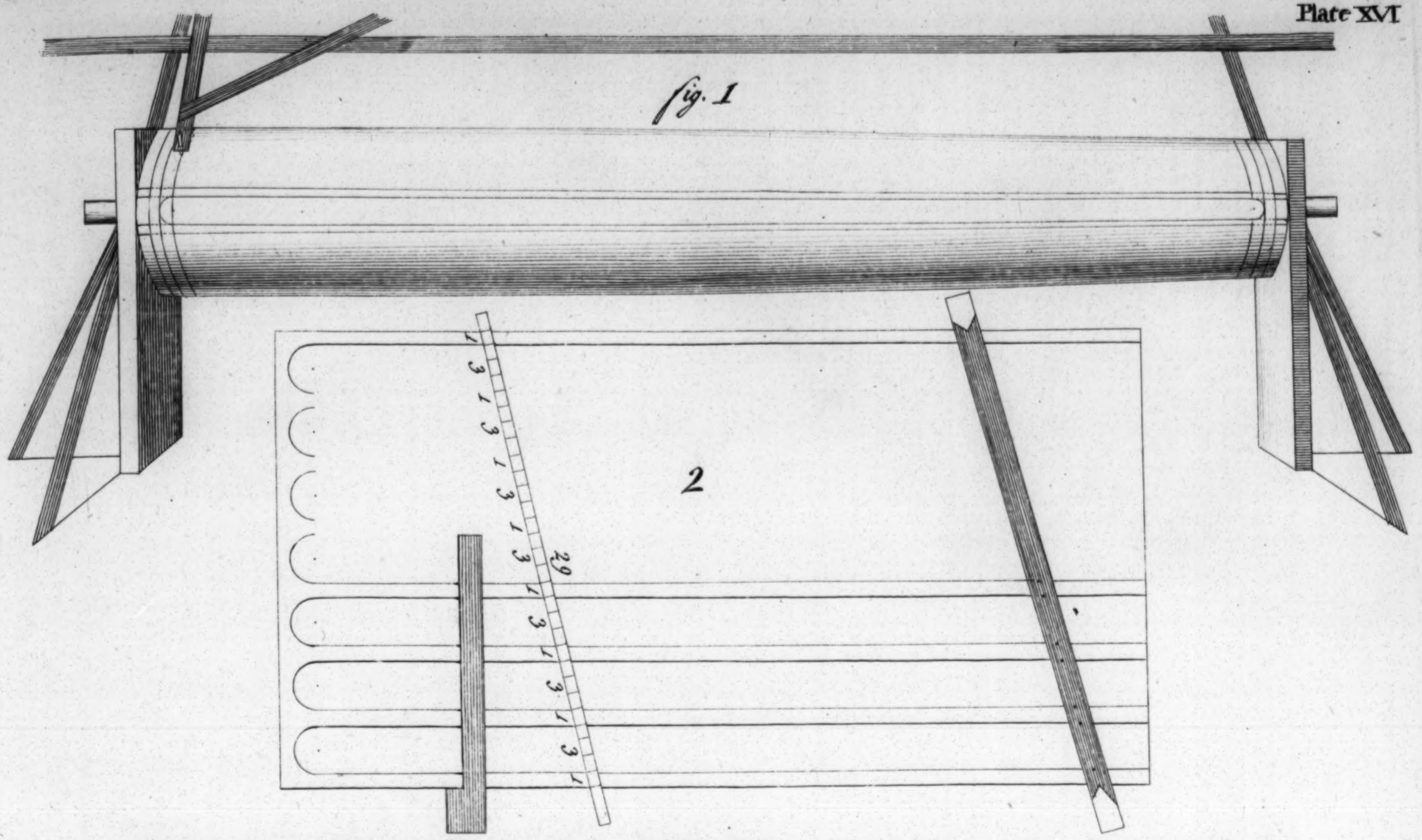
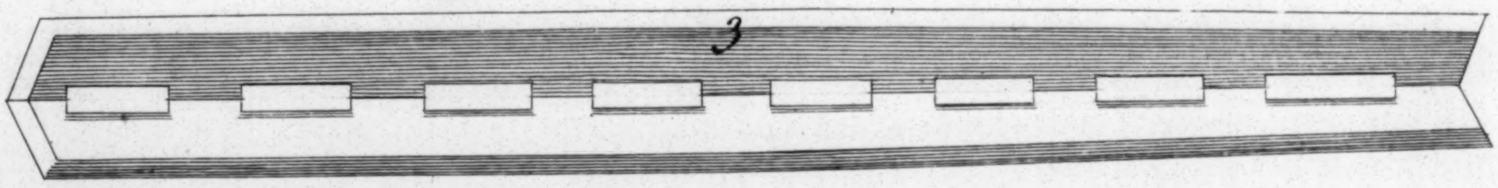
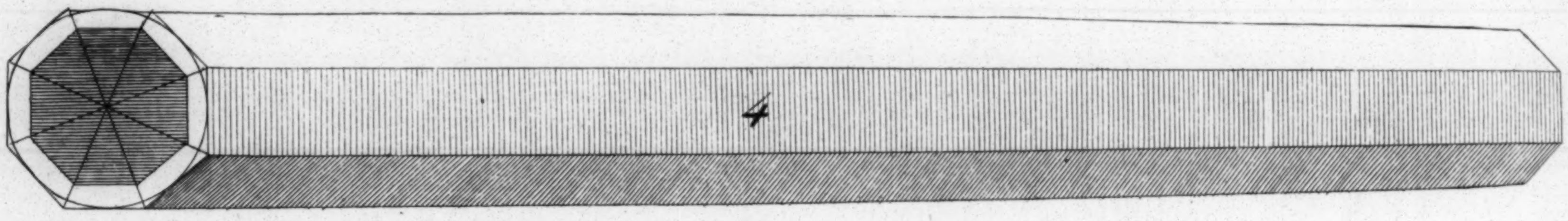
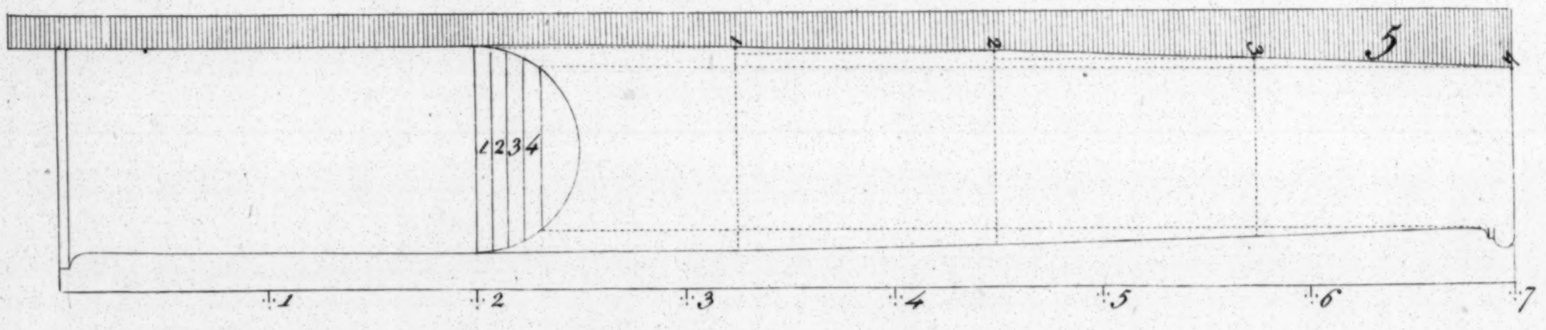
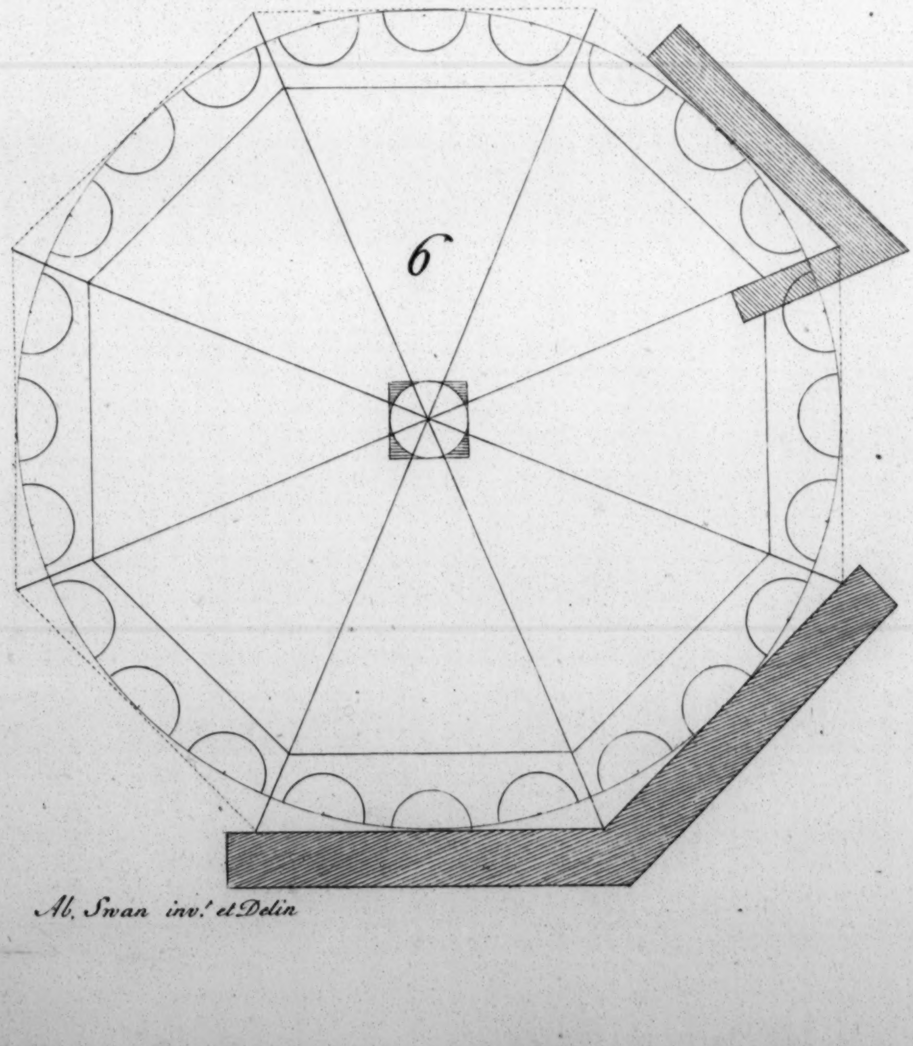


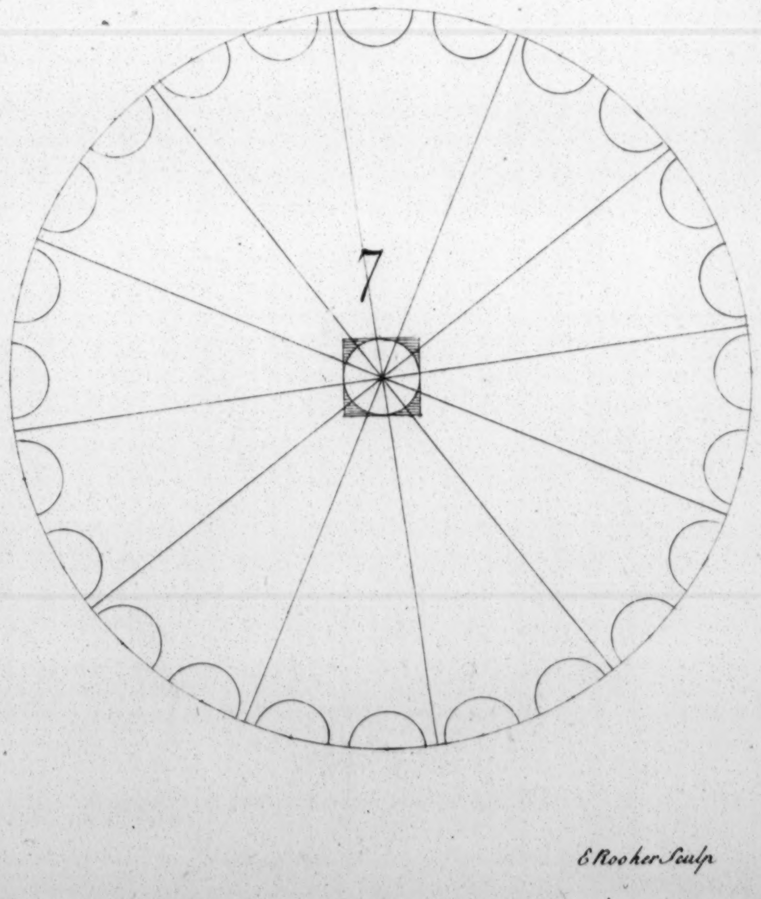
fig. 1
2
1
3
1
3
1
3
1
3
1
3
29
1
3
1
3
1
3
1





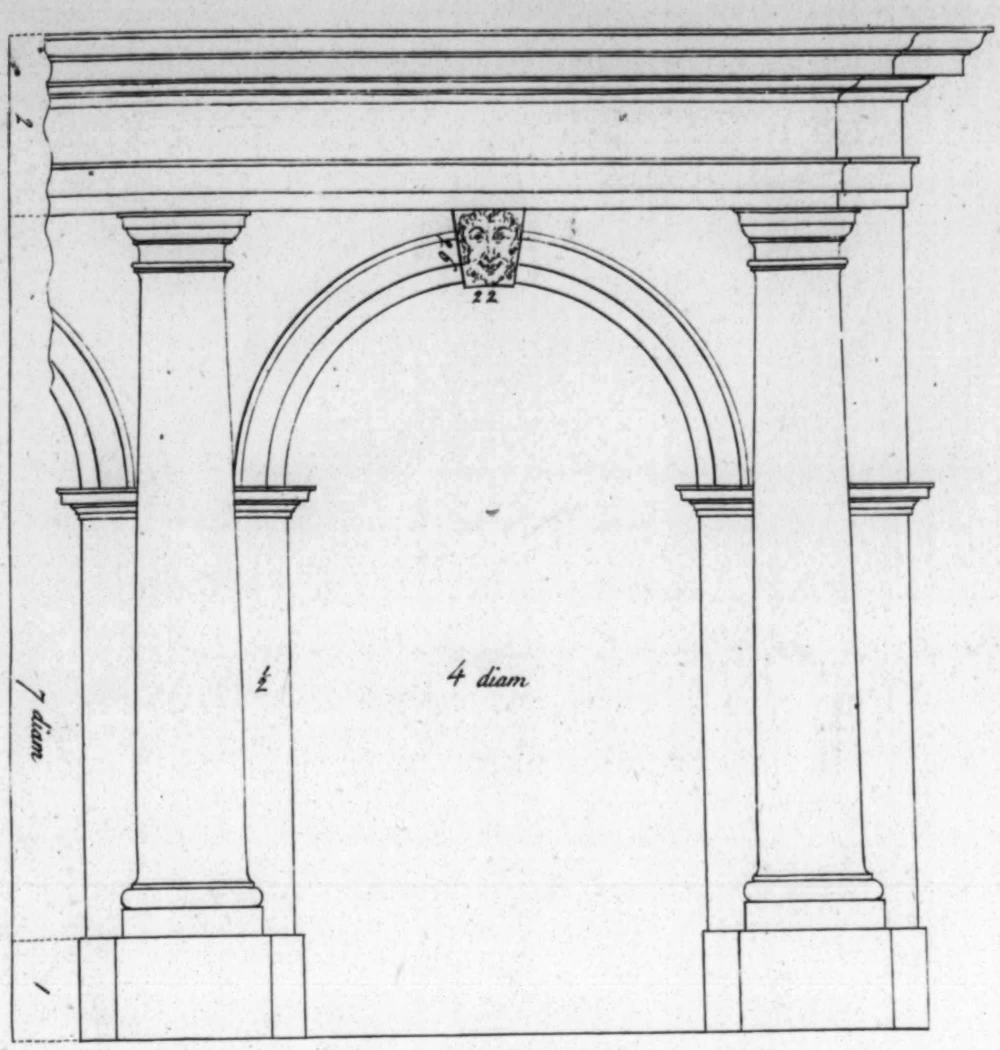

1
2
3
4
5
1234
1
2
3
4
5
6
7

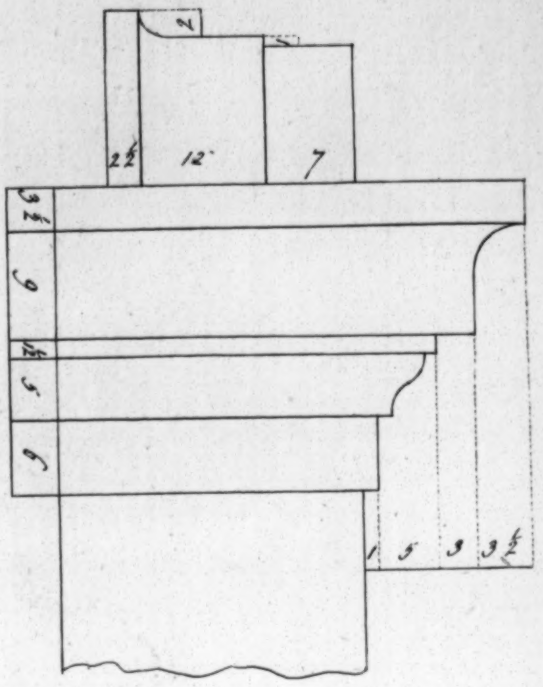


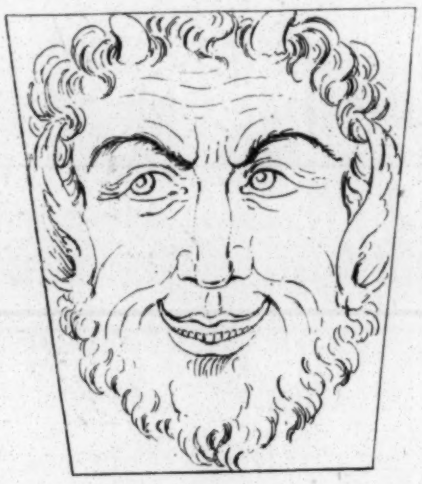


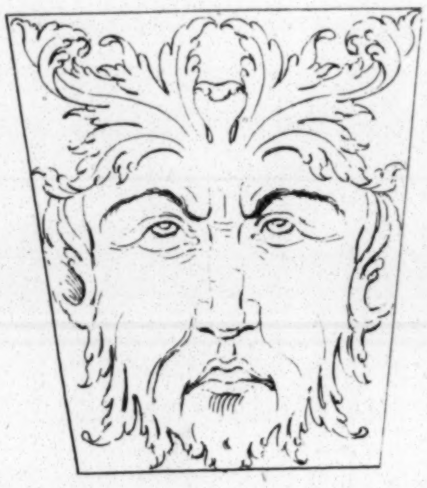
Ab. Swan inv. et Delin E Rooker Sculp

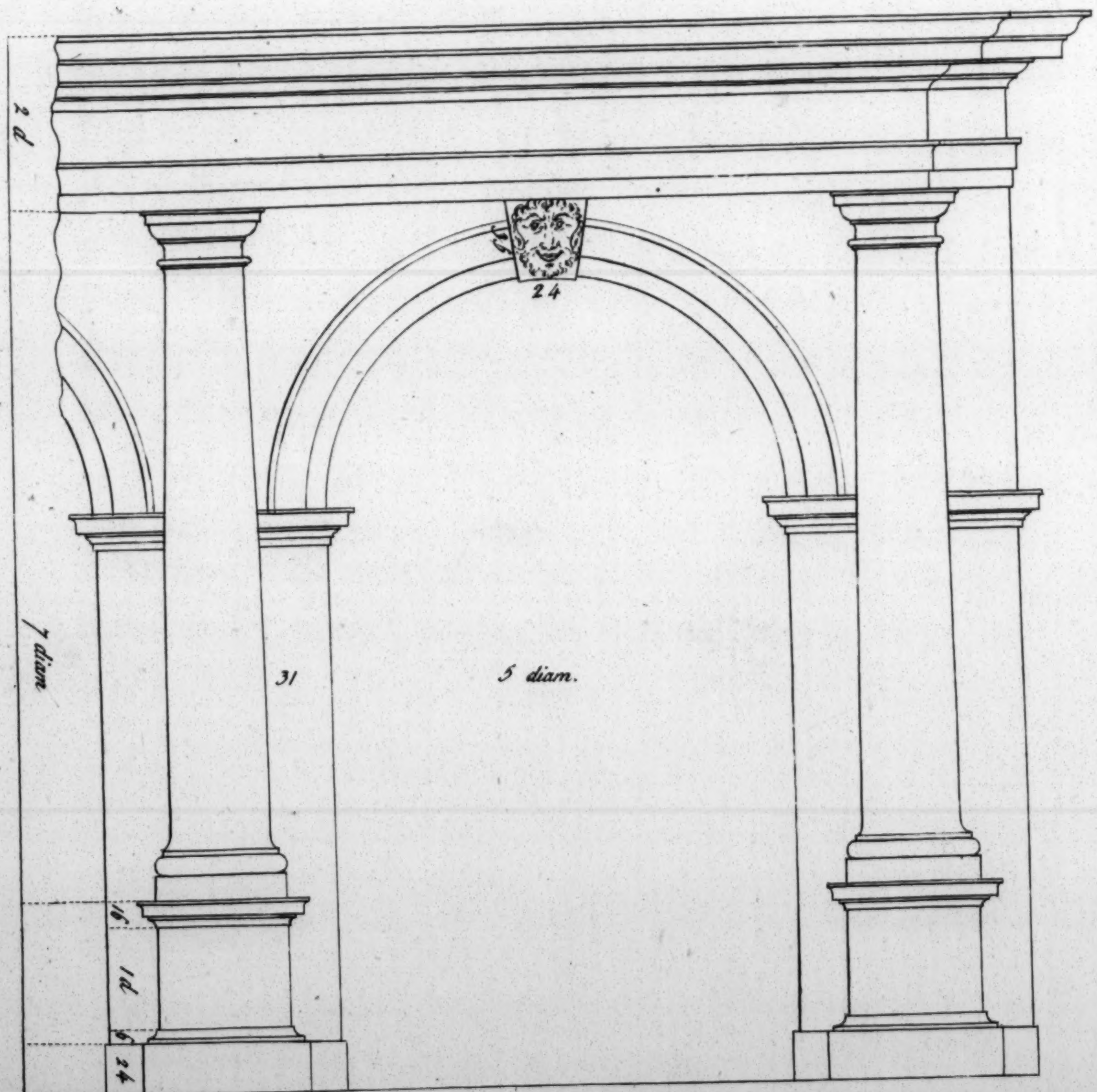
Plate XVII

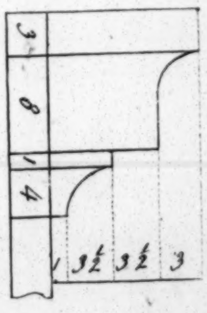

2
22
7 diam
½
4 diam
1

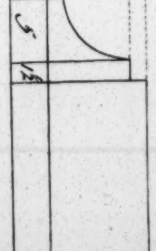

2
2½
12
7
3½
9
½
5
9
1
5
3
3½






2 d
24
7 diam
31
5 diam
16
1d
6
24


3
8
1
4
1
3½
3½
3



Ab Swan in et de

Rooker sc

The *COMPOSITE* Order.

PLATE XIV. Repreſents the principal Parts of this Order. Underneath you have *Palladio*'s *Cornice*. He gives twenty-four Parts to his *Freeze* in this Order, which is half the Diameter of his Column.

PLATE XV. Exhibits this Order, as in its Original; with each particular Part at large.

PLATE XVI. Shews the Manner of *Gluing* up Columns.

Of the Arches of all the Orders.

PLATE XVII. Repreſents two *Tuſcan* Arches; one with *Pedeſtals*, and the other with a *Plinth*, only the Diameter of the Column, which agrees with *Palladio*'s.

The Piers are never more than half the Opening, nor leſs than one Third; but *Palladio* ſeems to have more Regard to the Pierage and Opening of the Arch, than to the Space betwixt the *Modillions*. He takes no Notice of the Riſing of his Arch above a Semi-circle; as *Scamozzi* has ſhewn his *Tuſcan*, riſing ſeven Minutes and a Half, which is equal to ſix of theſe Parts, his *Doric* riſing ten Minutes, his *Ionic* twelve, his *Compoſite* fourteen, and his *Corinthian* ſixteen Minutes.

Sir *Chriſtopher Wren* ſeems to have exceeded theſe Proportions, in ſome of the Arches of St. *Paul*'s; but this probably was the Effect of his very juſtly conſidering, that a lofty Arch, at a near View, will have Part of its Beauty hid, by the Projection of the *Impoſts*; which made it neceſſary to give the greater Riſing above a Semi-circle to his Arches, which are lofty, and to be view'd but at a ſmall Diſtance from their Feet. If the Arch be low, or is to be view'd at any conſiderable Diſtance, it need not riſe but little above a Semi-circle, the *Impoſts* not being then capable of hiding much of it.

The lower Part of the *Key-ſtone*, and the *Architrave* that turns round the Arch, may be both made of the ſame Width.

It would be needleſs to ſay much more of the Arches, ſince the Meaſures are ſet to each particular Part in the Figures.

PLATE XVIII. Repreſents two *Doric* Arches; one with a great, and the other with a ſmall *Impoſt*; and different *Key-ſtones*. The Width of theſe Arches is regulated by their Number of *Triglyphs*.

PLATE XIX. Repreſents two *Ionic* Arches, with different *Impoſts* and *Key-ſtones*.

PLATE XX. Exhibits two *Corinthian* Arches, with their Meaſures ſet to each Part.

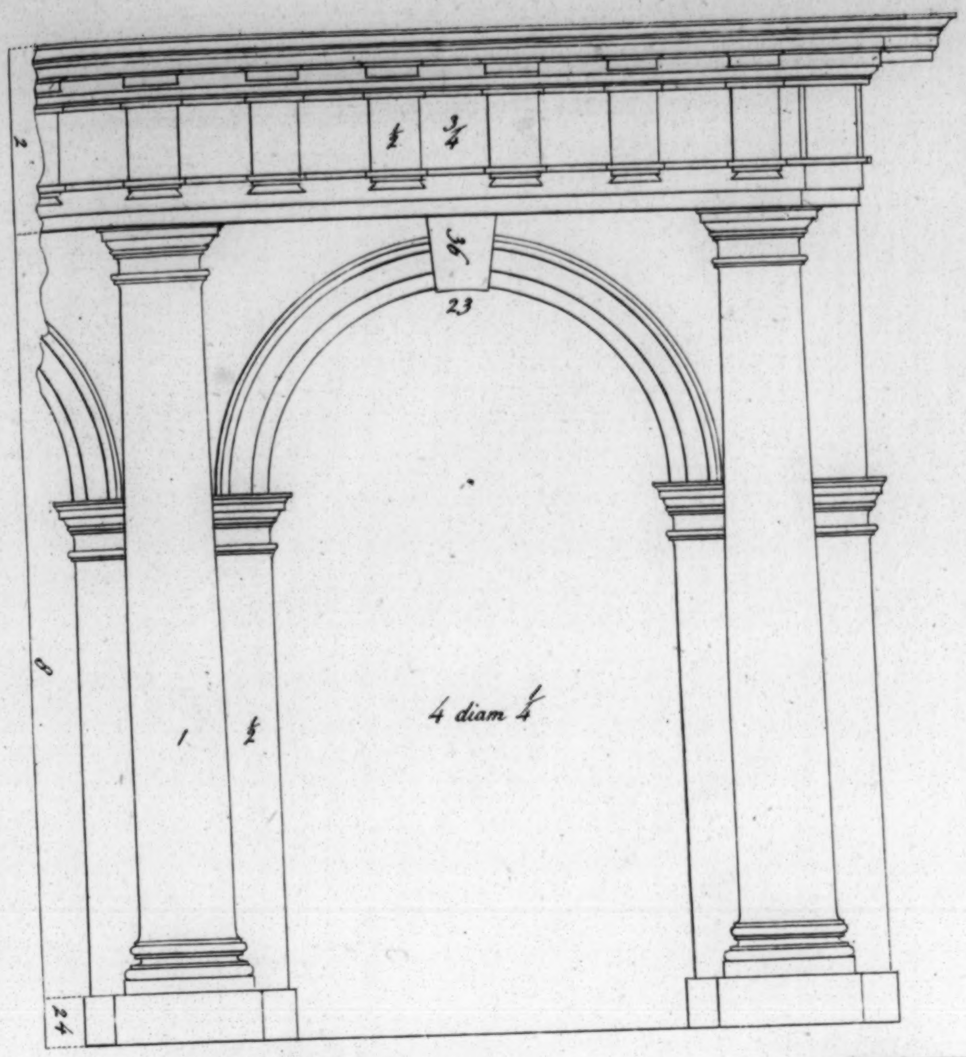
PLATE XXI. Shews the *Intercolumniations* of each Order from *Palladio*; with two Arches for Door-ways. You are to obſerve, that theſe Arches cannot be put in Practice, but where the *Impoſt* is above the Eye, which cannot well be leſs than the Height of ſix Feet.

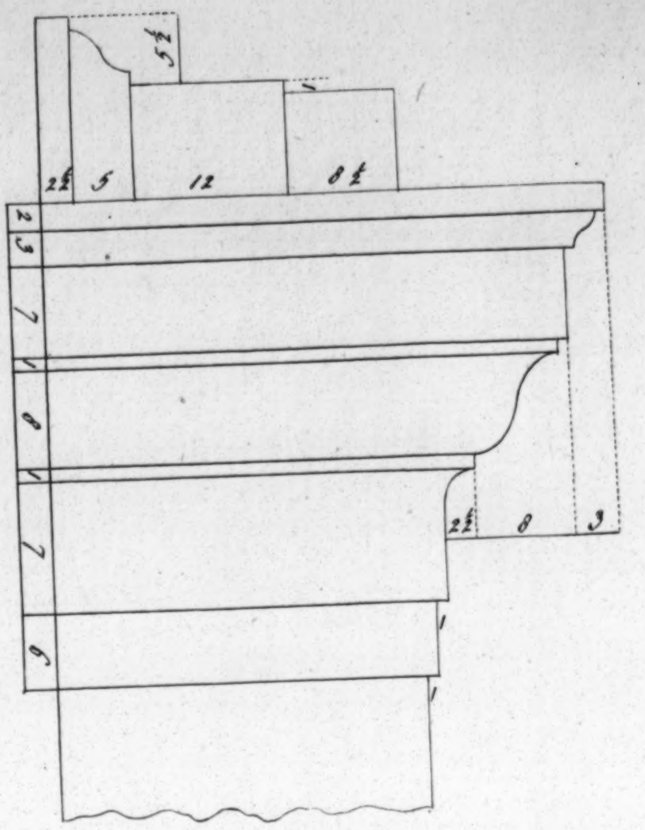
Several Deſigns from *Palladio*, of Arches over Arches.

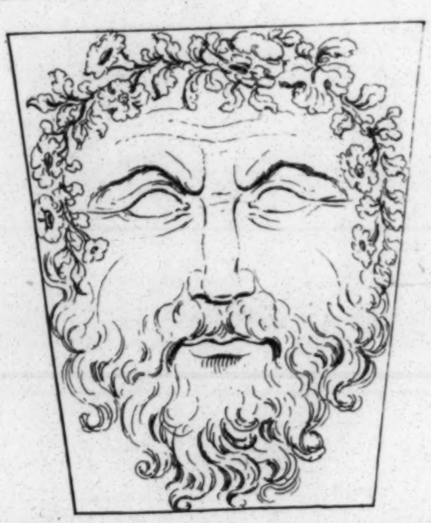
PLATE XXII. The Deſign in the Middle is taken from *Palladio*'s third Book. The *Triglyphs* over the lower Arch, are not to be the Guide in regulating its Width, there being but five in the whole Width betwixt the Columns, which are nine Diameters in the Clear. Over this Arch is a *Venetian* Window, of nine Diameters and eight Parts, from Column to Column; the eight Parts are occaſioned by the Columns underneath diminiſhing one ſixth Part.

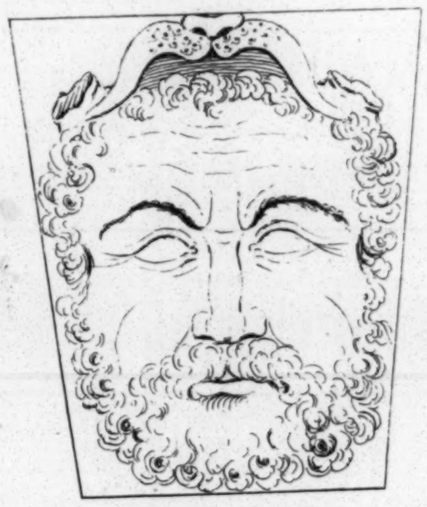
The other three Deſigns are taken from *Palladio*'s ſecond Book. The Deſign on the Right-hand repreſents two Arches, one over the other; the lower of which is a *Doric* Arch, five Diameters from Column to Column, and the *Ionic* above it is five Diameters and eight Parts. The Columns ſtand on a *Plinth* equal to half their Diameter, and the *Balluſters* are in the Opening of the Arch.

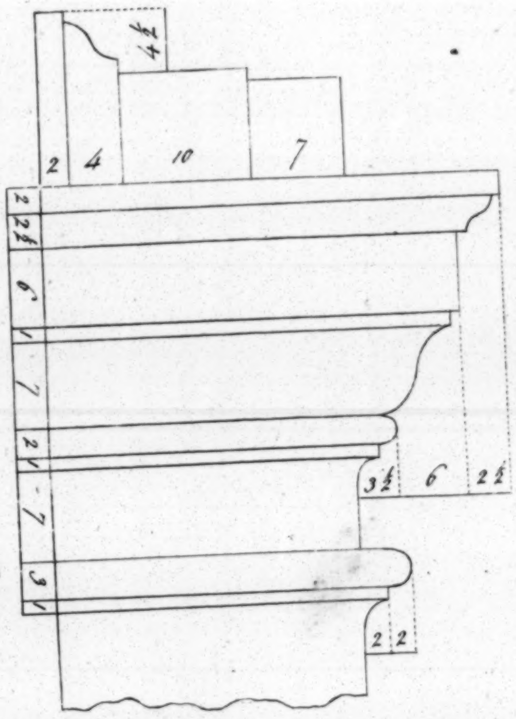
Underneath you have the *Ionic* Order ſet upon a *Ruſtic Baſement*. At the left-hand are two Deſigns of *Venetian* Windows; the Opening of each Arch is ſix Diameters and a Half; the Spaces on each Side may be the common Intercolumniation, as there repreſented.

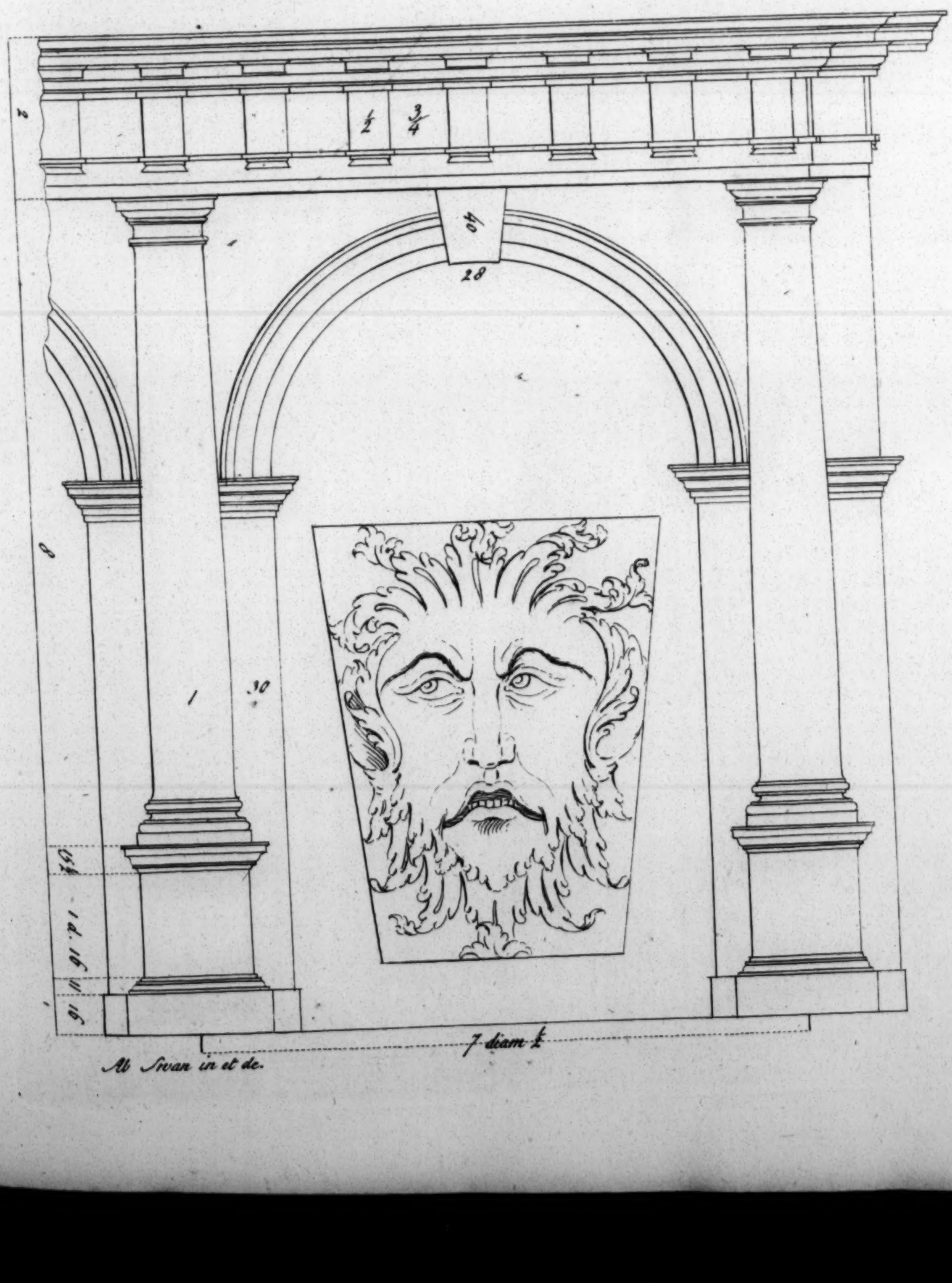

2
1/4 3/4
36
23
8
1 1/2
4 diam 1/4
24

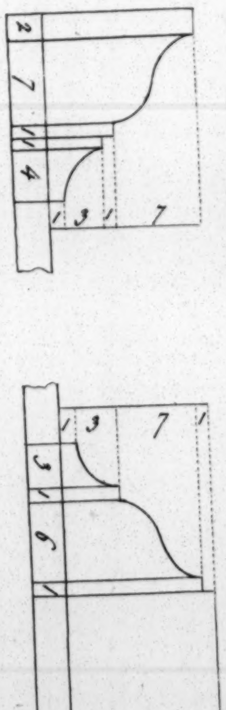

2 1/2 5 12 8 1/2
2 3 7 1 8 1 7 9
2 1/2 8 3
1
1

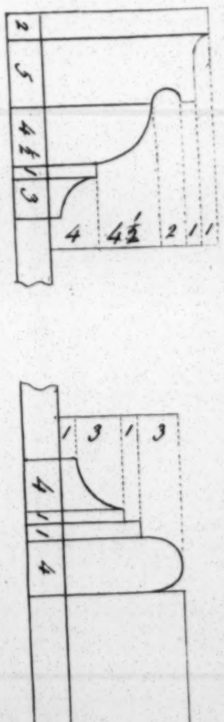


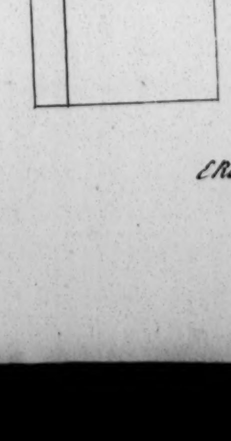


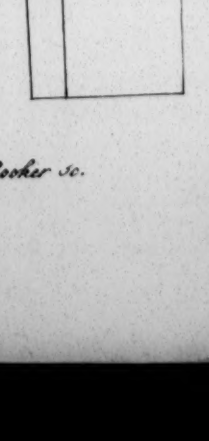

2 4 10 7
2 2 1/2 6 1 7 2 1 7 3 1
3 1/2 6 2 1/2
2 2


2
1/2 3/4
40
28
8
1
30
7 diam 1/4



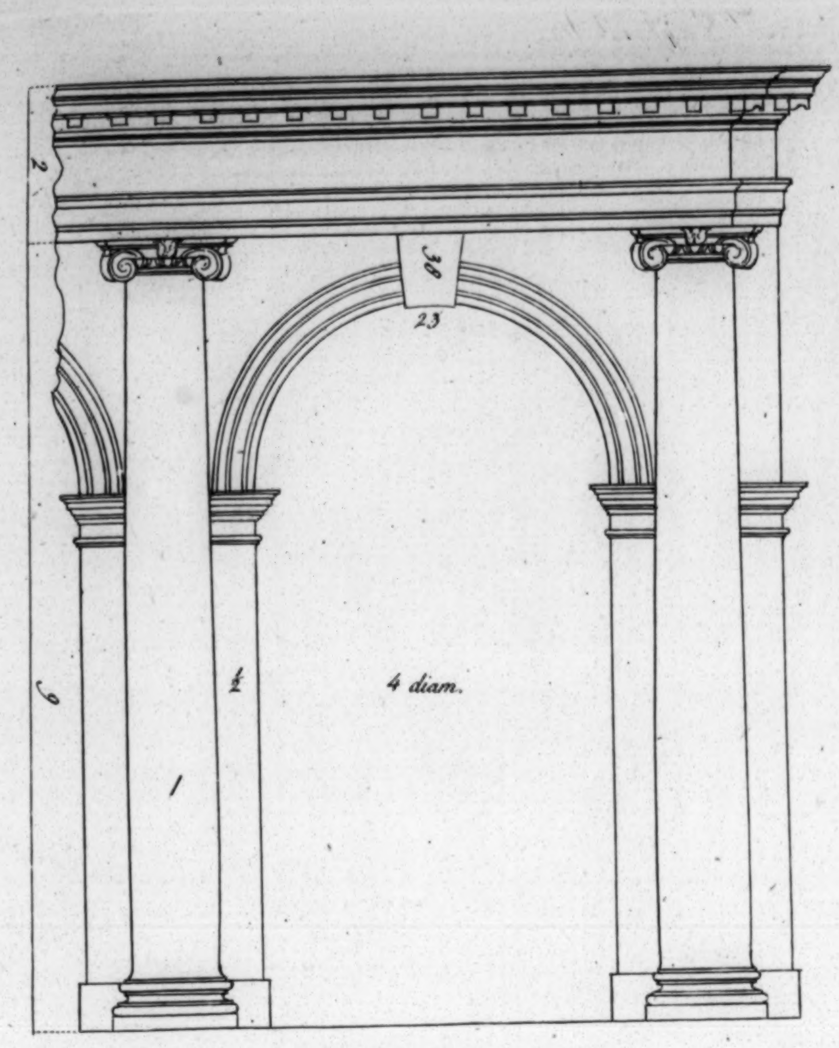

2 5 4 1/2 1 3
4 4 1/2 2 1 1

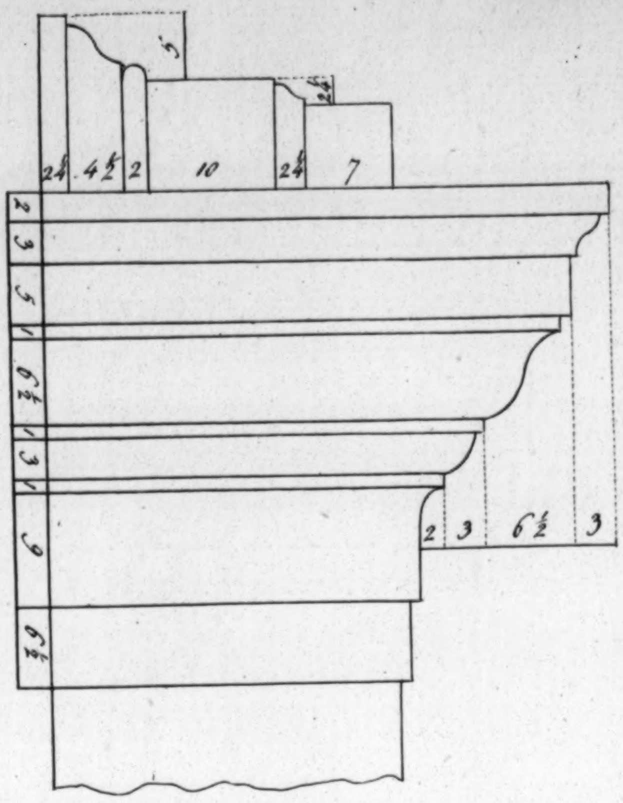

1 3 7 1
3 1 6 1
24

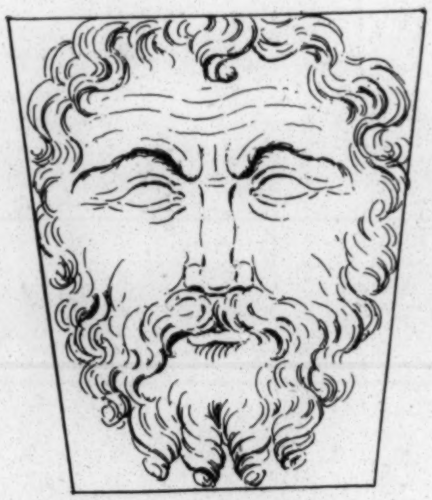

1 3 1 3
4 1 1 4
24

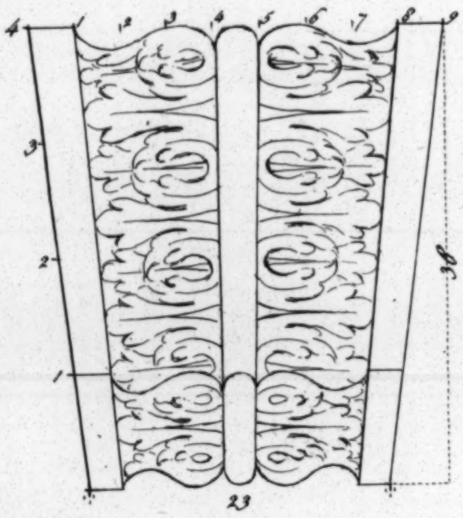
Ab Swan in et de.

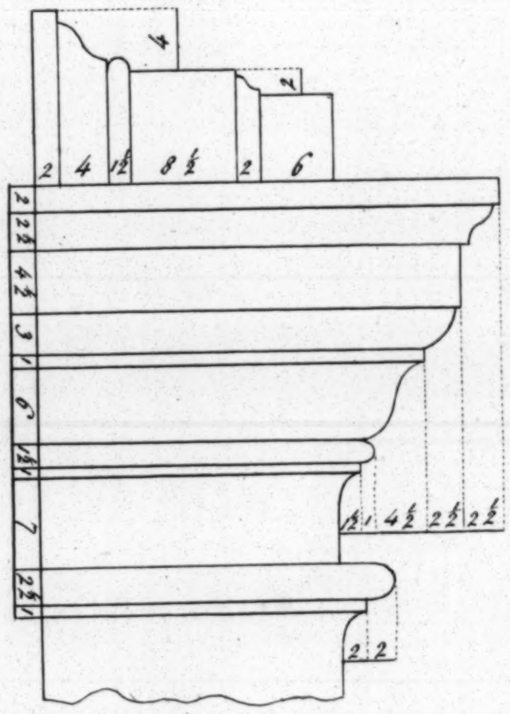
I Rooker sc.

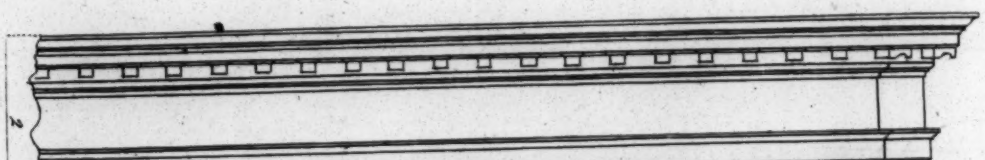

2
38
23
9
½
1
4 diam.

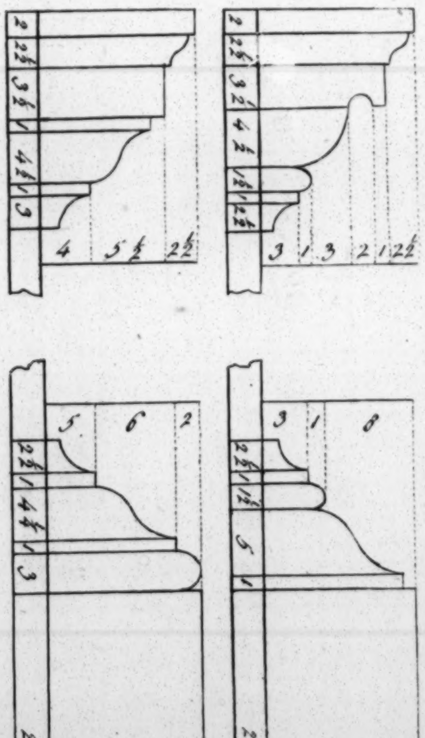

5
2½
2½ 4½ 2 10 2½ 7
2
3
5
6½
3
9
6½
2 3 6½ 3





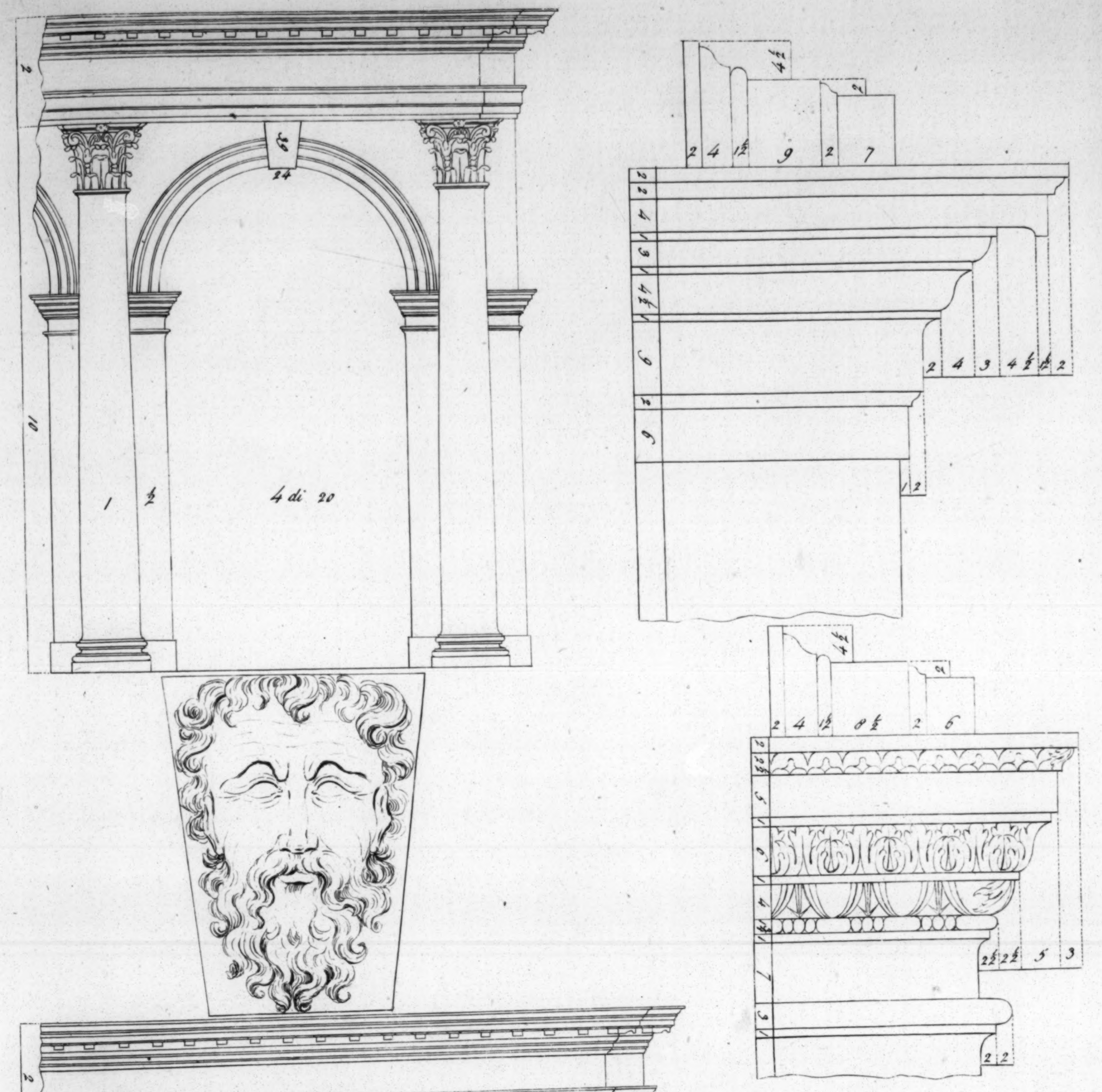

4
2
2 4 1½ 8½ 2 6
2
2½
4½
3
6
1½
7
2½
1½ 4½ 2½ 2½
2 2


2
40
28
9
28
1
16
1 d. 20
11
2½
1 d. 17
7 diam ¾


4 5½ 2½
3 1 3 2 1 2½
5 6 2
3 1 8
24
24

Ab Swan in et dc

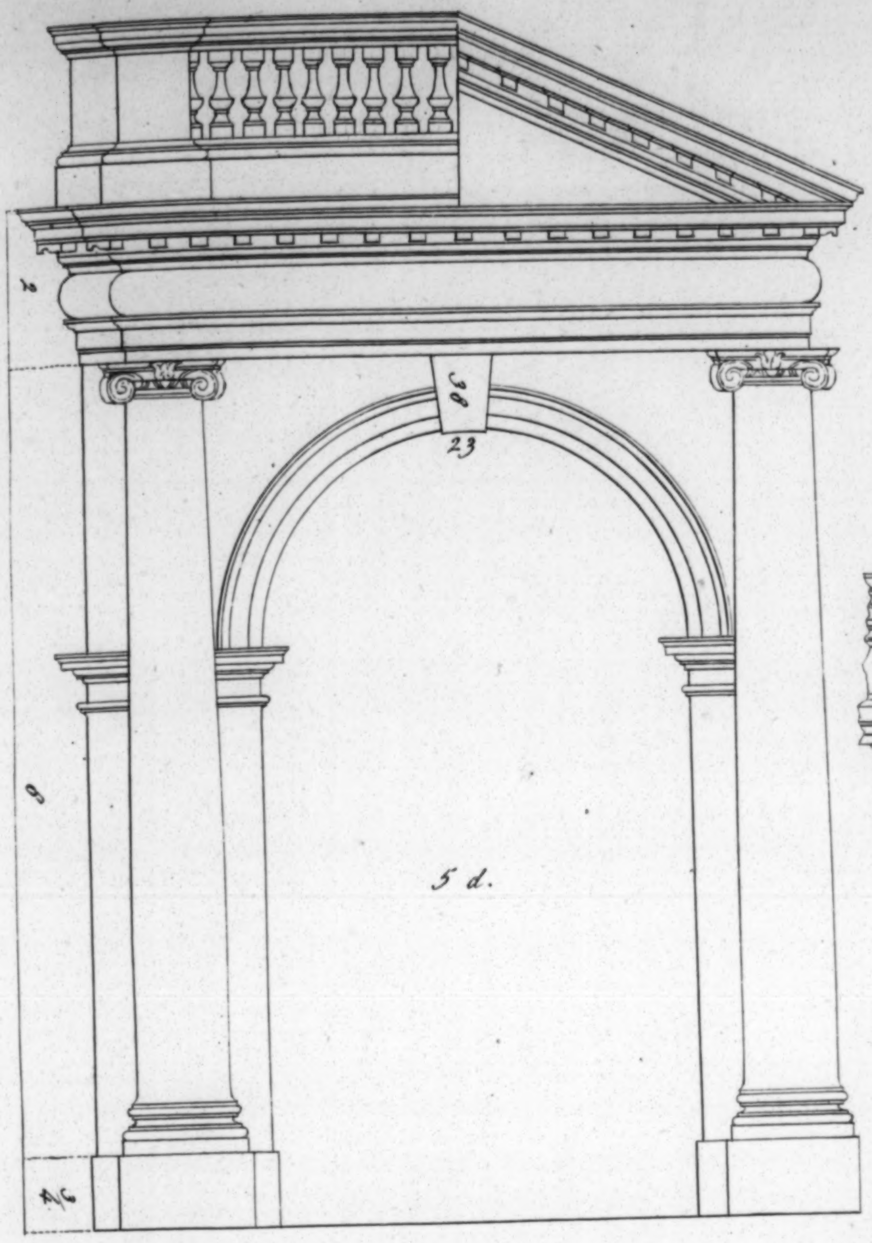
Rooker sc.

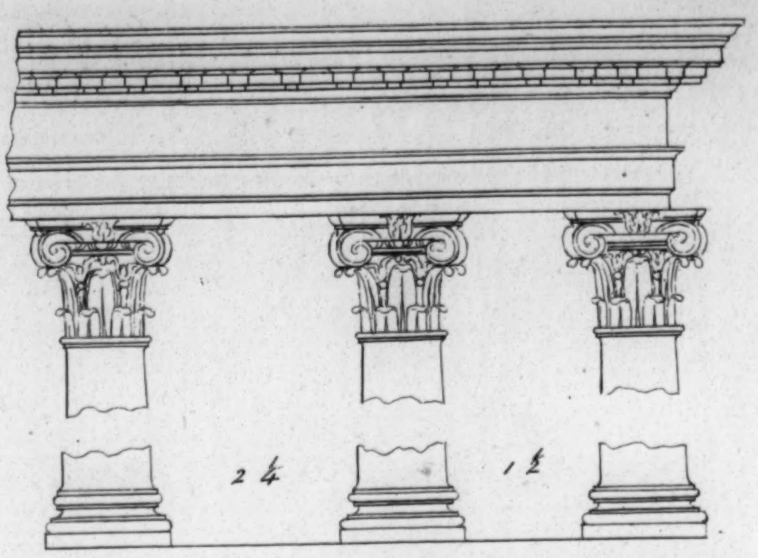

2
39
24
10
1
½
4 di 20
2 4 1½ 9 2 7
2 4 3 4½ 4½ 2
1 2
2 4 1½ 8½ 2 6
2½ 2½ 5 3
2 2
2
43
26
10
1
30
5 diam 40
1 di 36
24
3 3 2½ 1 2½
3 6½ 2½
4 6 2
2½ 1½ 6 2
24
24

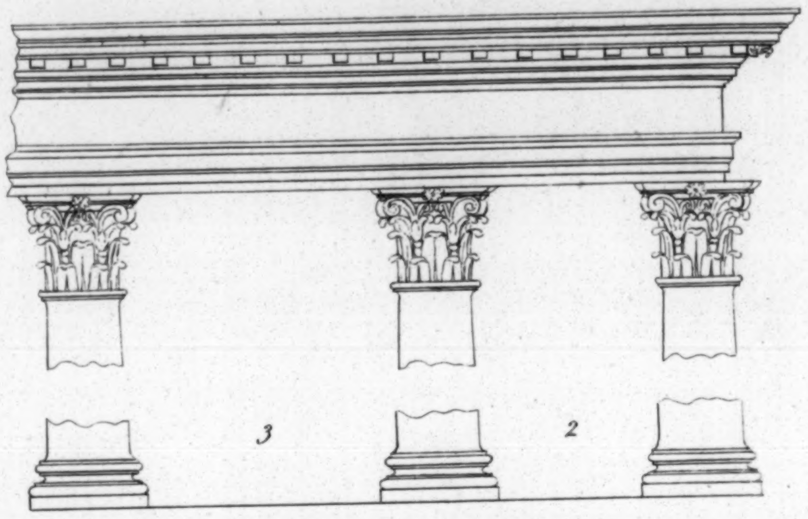
Ab. Swan in et de

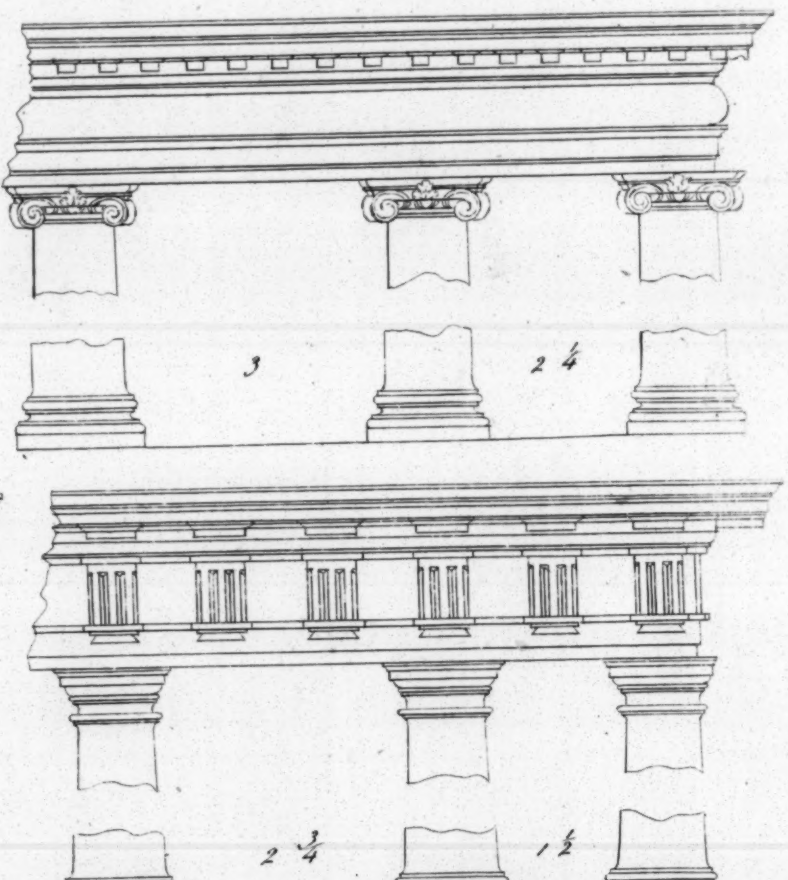
Rooker sc

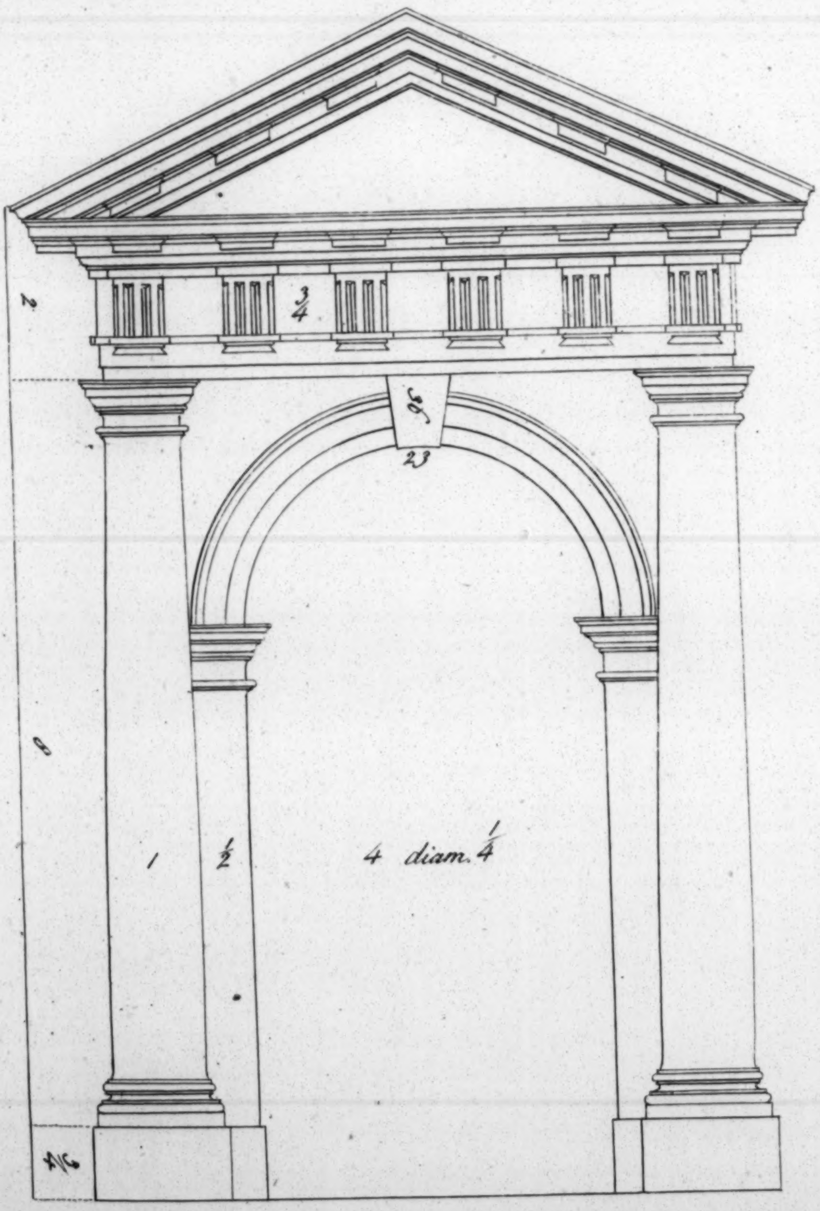
Plate XXI

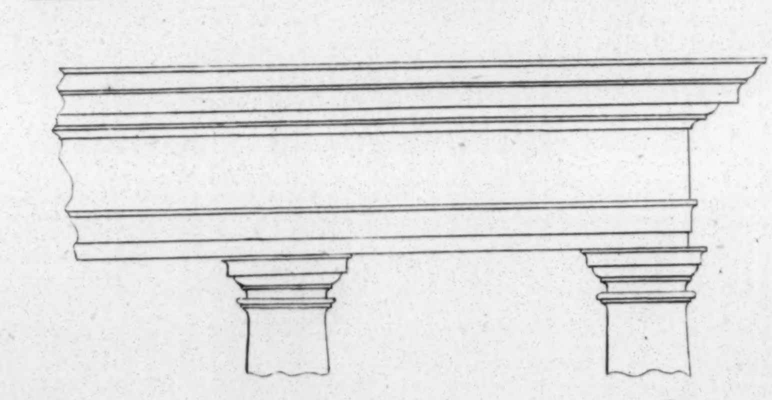


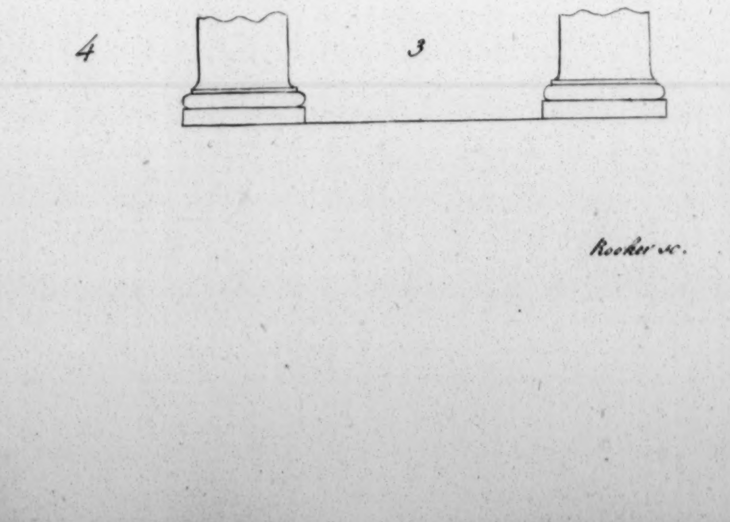






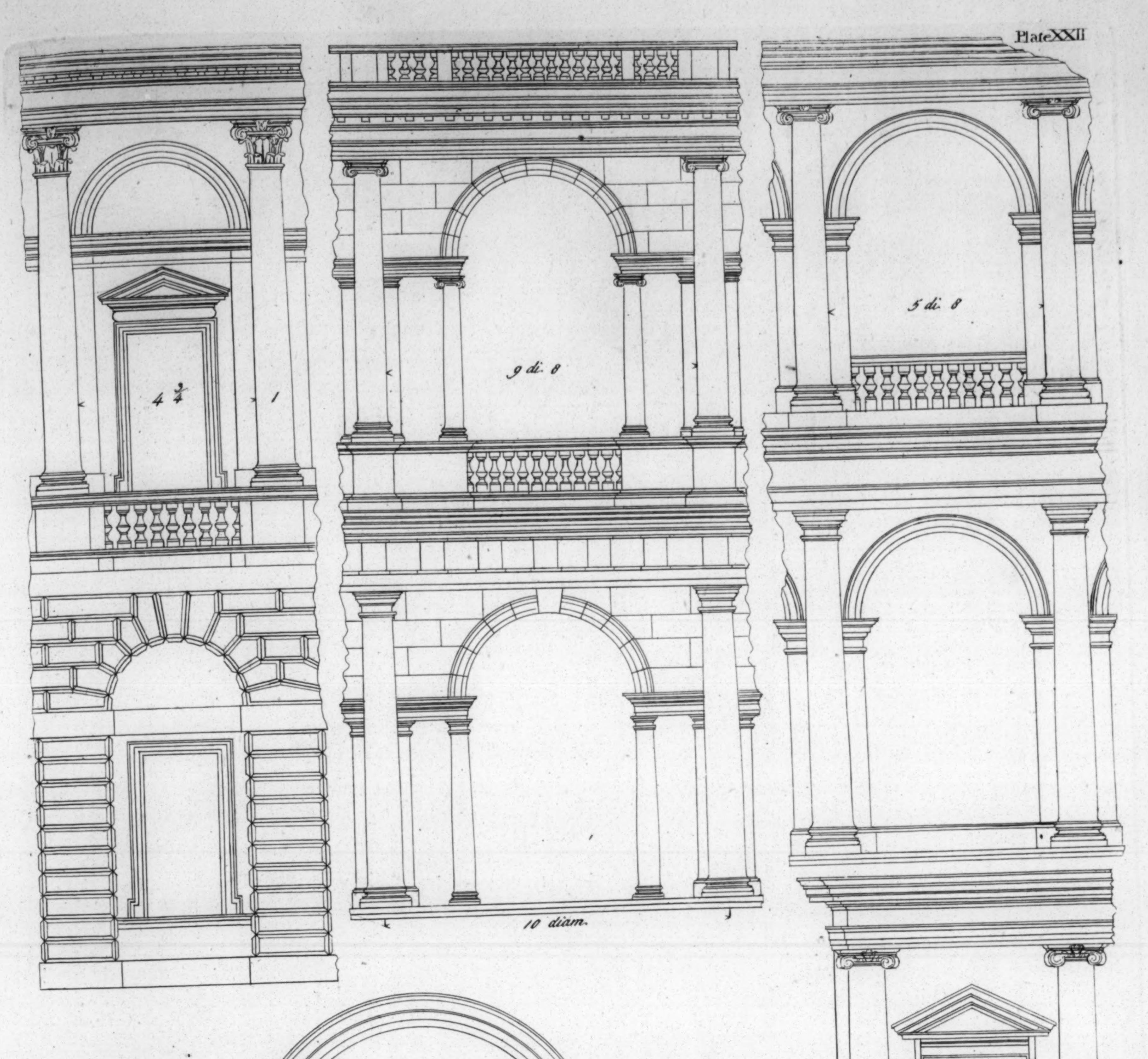

2
3/4
23
8
1
1/2
4 diam. 1/4





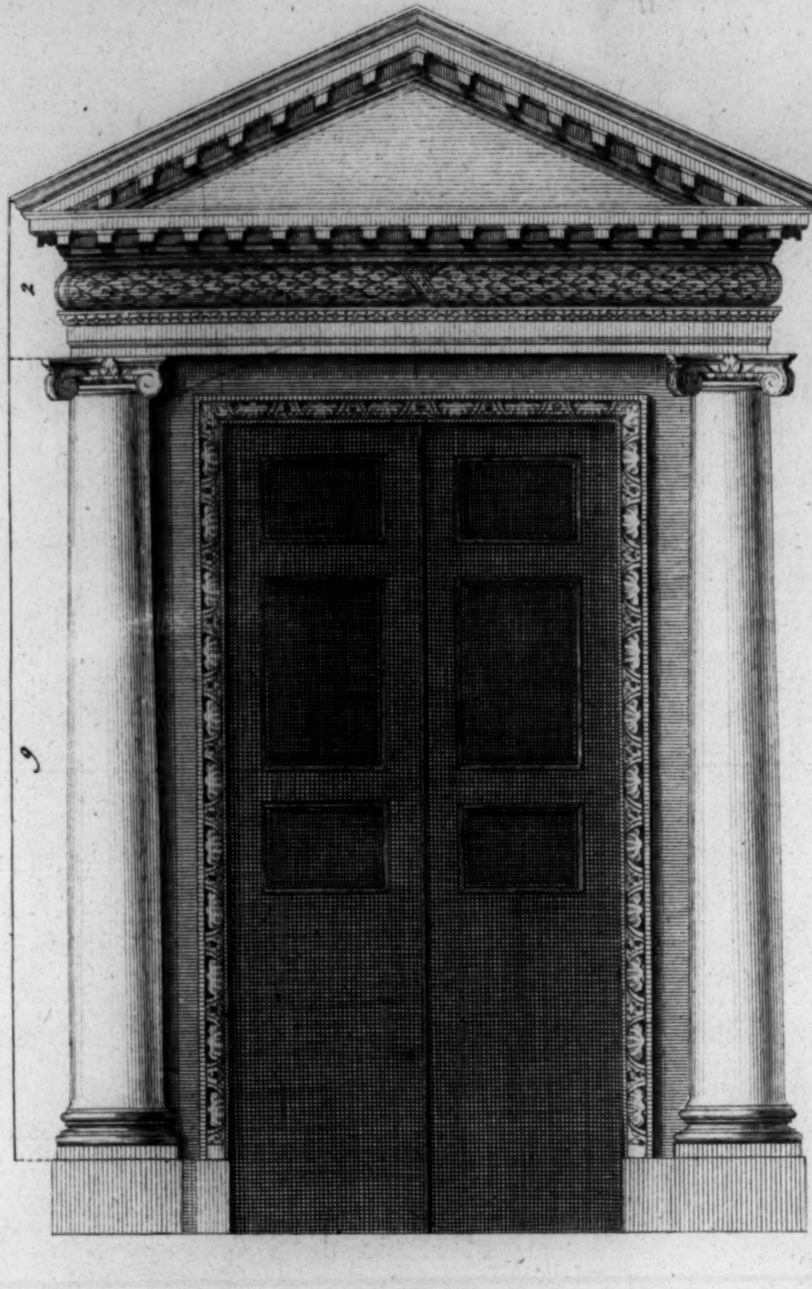
Ab. Swan in et de. Rooker sc.

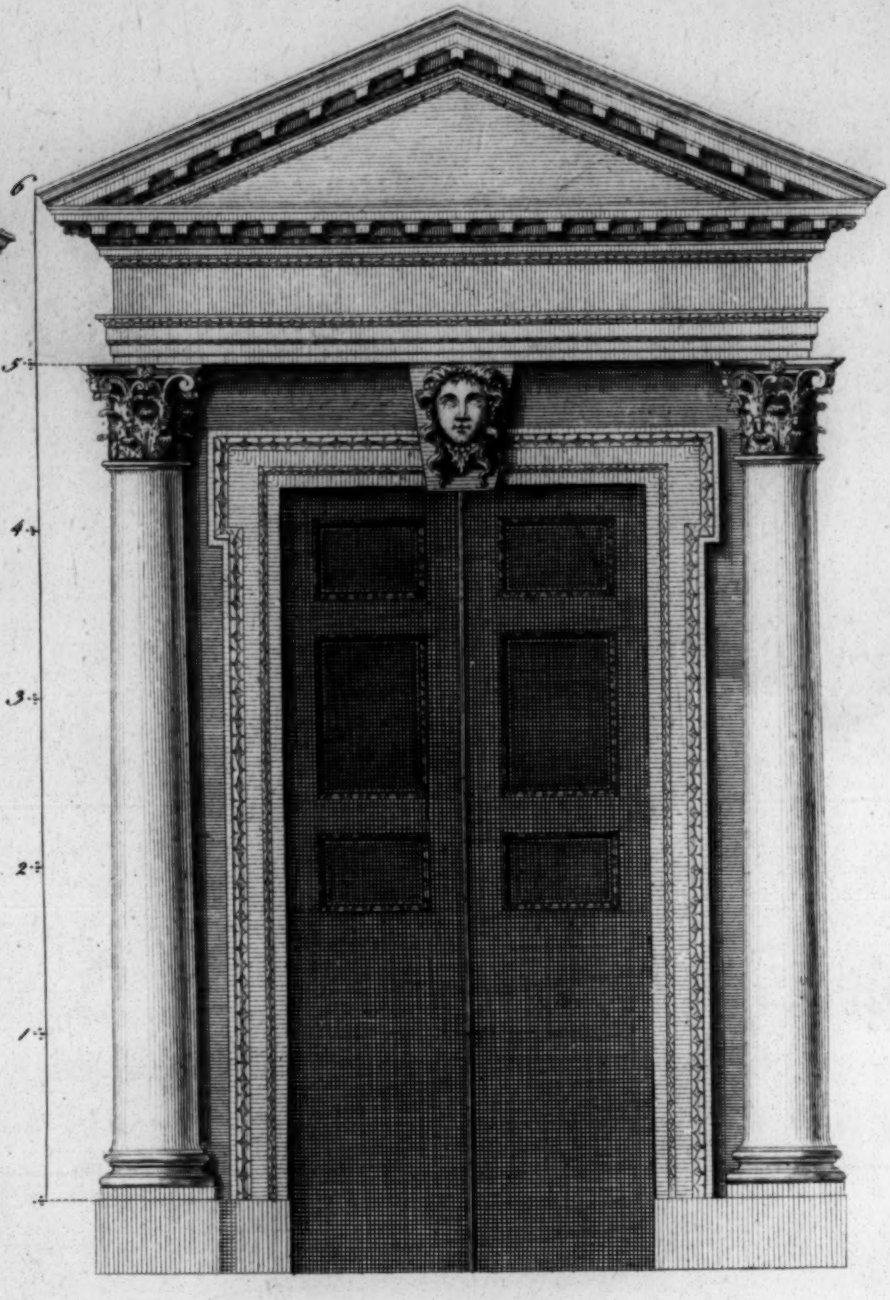
Plate XXII

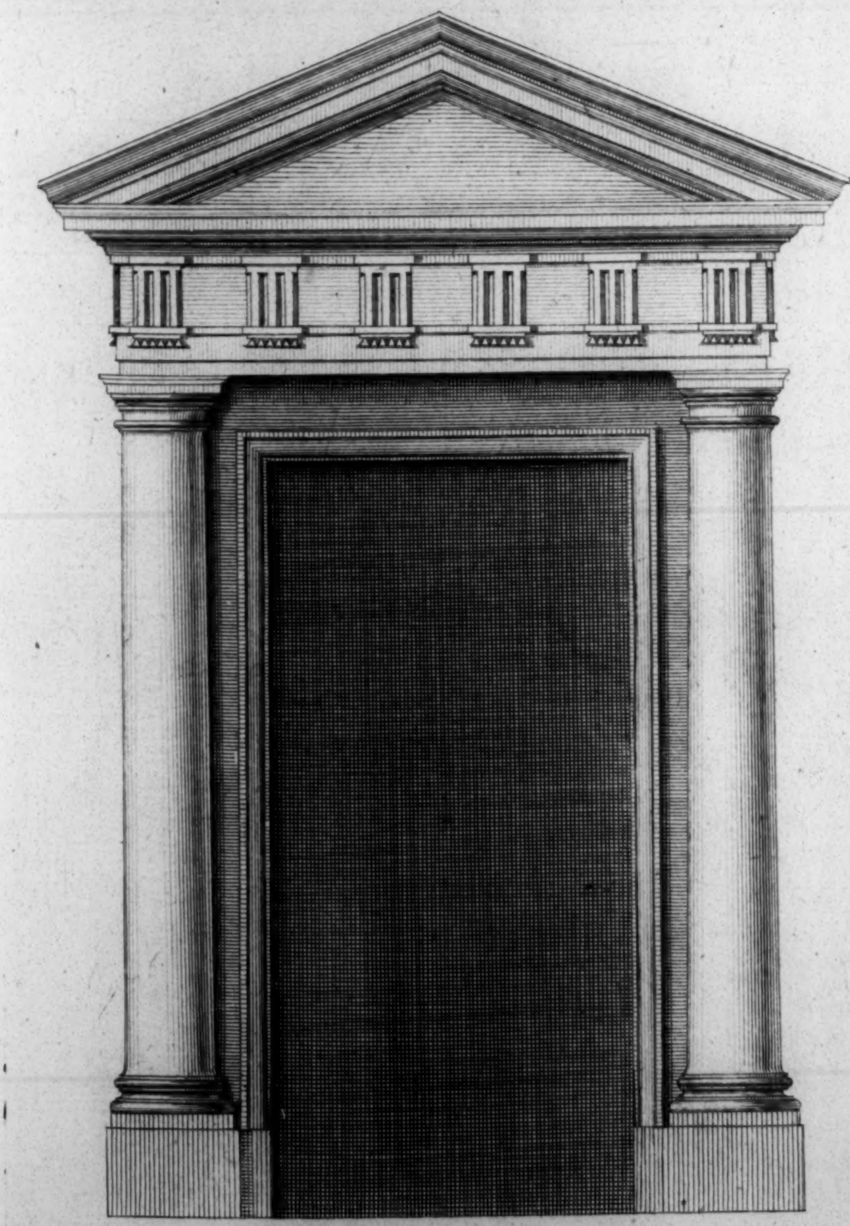


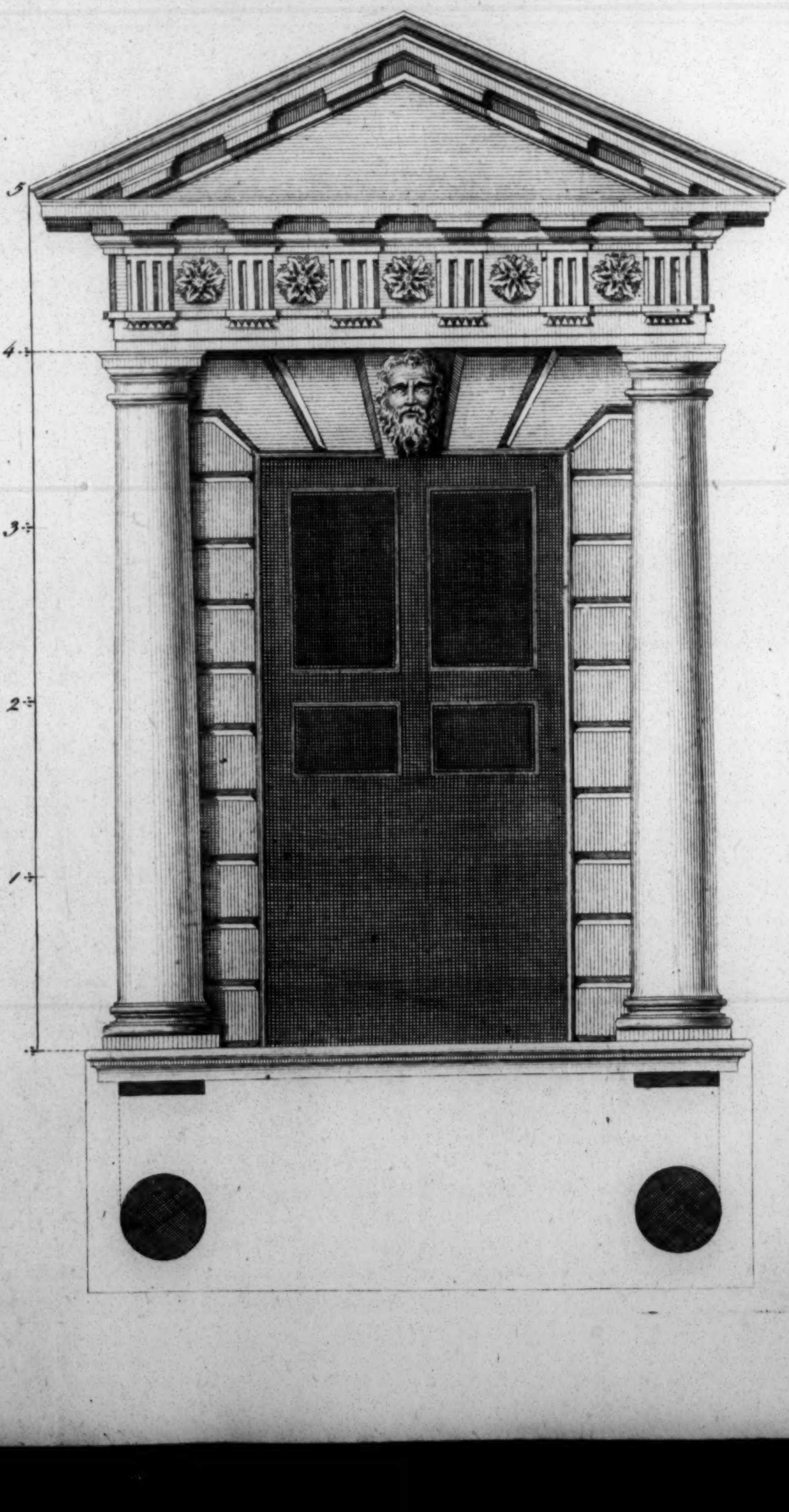
$4\frac{3}{4}$
1
9 di. 8
5 di. 8
10 diam.
$2\frac{1}{4}$
$6\frac{1}{2}$
$2\frac{3}{4}$
$6\frac{1}{2}$
1
$4\frac{1}{4}$

Ab Swan in et de



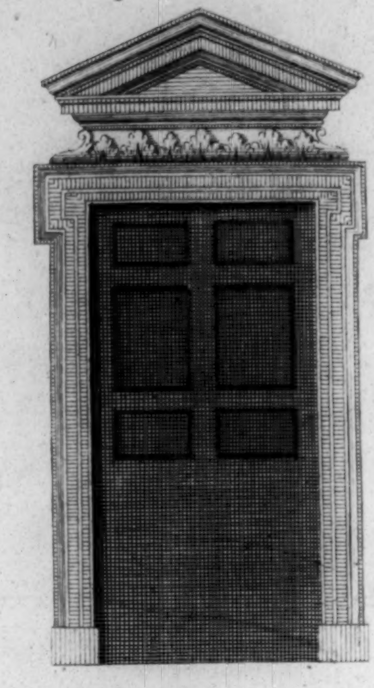
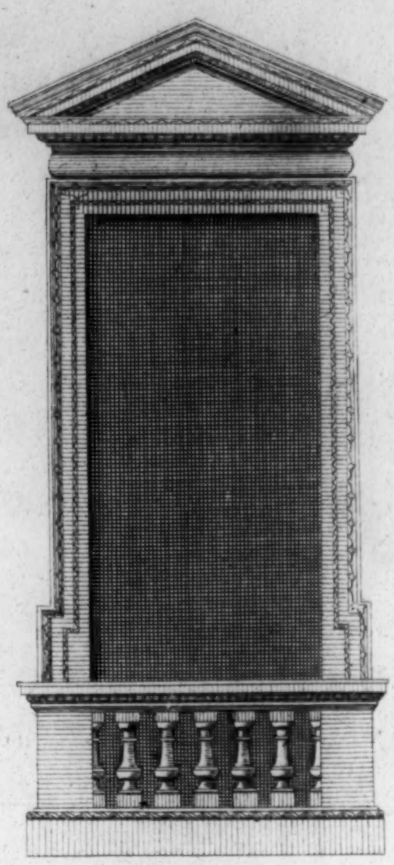
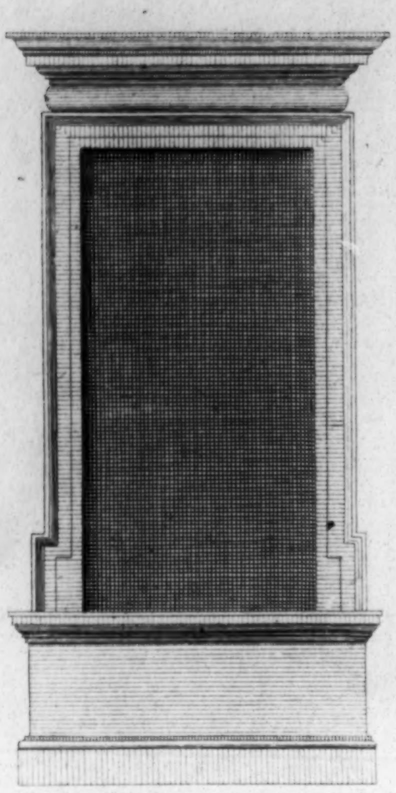
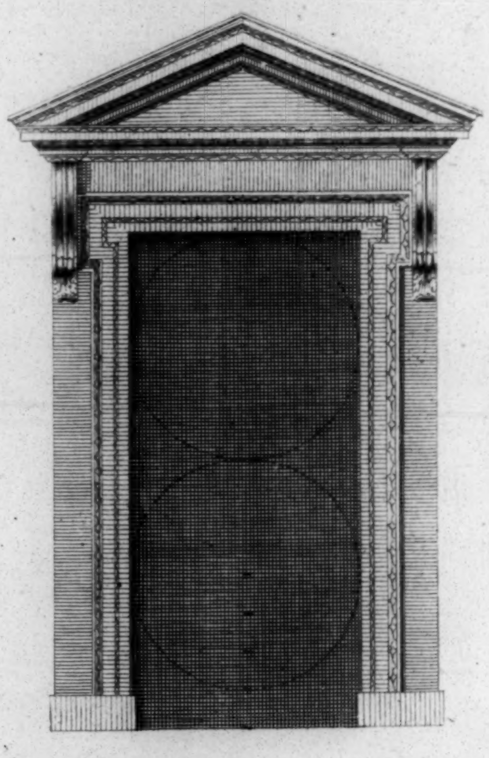
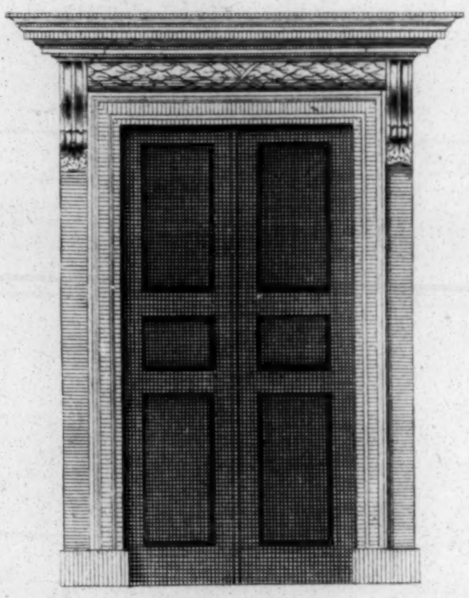
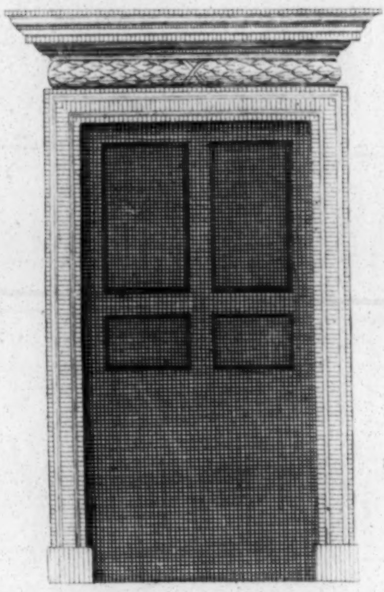
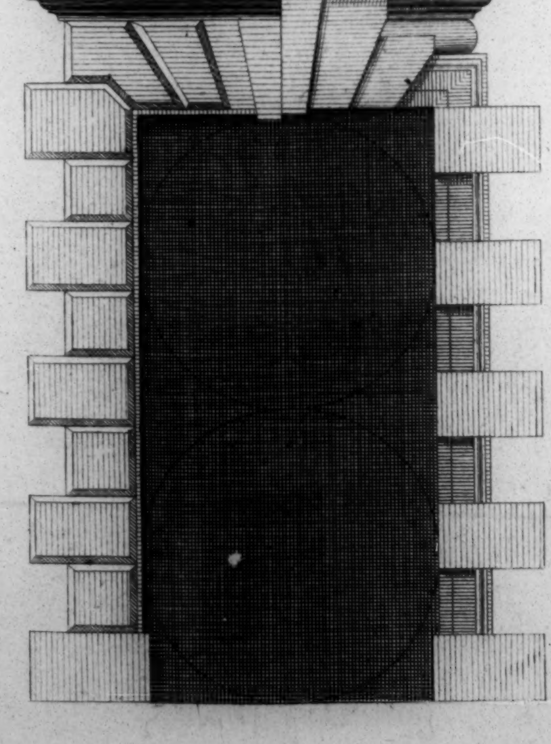
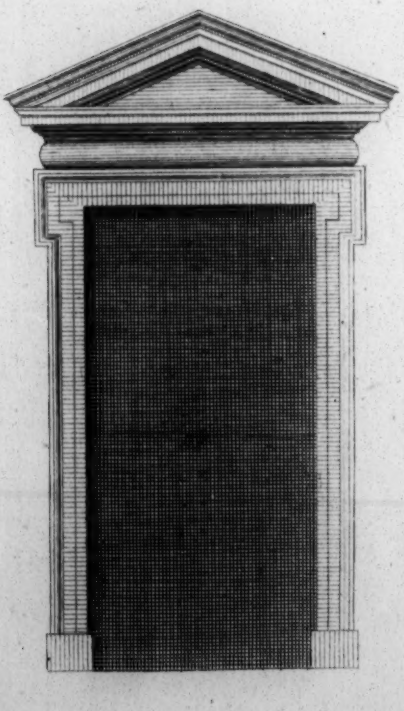
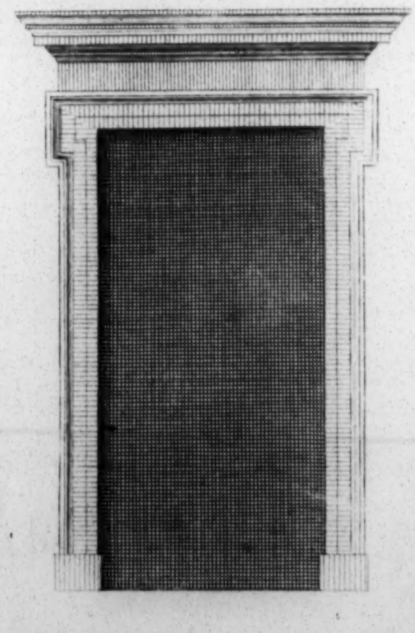






Ab Swan inv et delin. C Rooker sculp.

Plate XXIV

Ab Swan inv et delin

E Rooker sculp

Four Different Deſigns of Doors.

PLATE XXIII. The lower Deſign to the Right-hand is a *Doric* Door with *Ruſtic Jambs.*

Let the Height of the Column be divided into eleven equal Parts; then one and two Thirds is the Length of the *Key-ſtone.* From the Middle of one Column to the Middle of the other is ſix Diameters and a Quarter; and the *Entablature* is one fourth Part of the Height of the Columns. You are to obſerve, that when the Columns ſtand on a Step, as in this Deſign, they are to have only their proper *Plinth*; but when uſed as repreſented by the lower Deſign on the Left-hand, there is ſometimes Half the Diameter, ſometimes three Quarters, and often the whole Diameter given to the *Plinth.* The upper Deſign on the Left-hand is an *Ionic* Door; the *Entablature* is two Ninths of the Column's Height, as is ſhewn on the Side; and the *Modillion* with the Space betwixt each, is Half the Diameter and three Parts.

Several Deſigns of Doors and Windows.

PLATE XXIV. The *Truſſes* for theſe Doors and Windows are deſcribed in the following, or on Plate XXV; and their *Architraves*, *Freezes*, and *Cornices*, at large on Plate XXVI.

The Corner of a Door and Window, or Chimney at large.

PLATE XXV. You have in this PLATE the Corner of a *Door*, *Window*, or *Chimney*, with its *Truſs* at large; and the Meaſures ſet to each particular Part.

There are three different Rules, or Proportions for *Pediments*; which are two Ninths, one Fifth, or one Fourth of the whole Extent. 'Tis the firſt of theſe that I have followed in FIG. I. two Ninths being the mean Proportion betwixt the other Two.

In FIG. II. I have ſhewn the Manner of the *Raking Cornice*. To deſcribe this——Firſt form the lower *Ogee*, which is the Level, or Horizontal Part of the *Cornice*, from which draw the Lines that repreſent the Pitch of the *Pediment*, and divide its Height into four equal Parts, as in the Figure; then draw the *Raking Lines* 1, 2, 3, to the lower *Ogee*, and where they cut that *Moulding*, draw dotted Lines, as *a b* to the upright Line; then transfer theſe to the other two *Ogees*, and *a b*, *a b*, and *a b*, will have each of them an equal Projection from their reſpective Uprights: And ſo of the reſt. It will be needleſs to deſcribe the Manner of a *Raking Hollow*, or *Round*; they being both form'd in an *Ogee*.

FIG. III. Repreſents the upper Part of the *Modillion* with its *Capping*. The *Raking Mould* may be found in the ſame Manner as in FIG. II.

Two Deſigns of Cornices for Doors, or Windows

PLATE XXVI. To proportion the upper Deſign——Divide the Opening of the Door into ſix equal Parts, as is uſual; one of them is the Width of the *Architrave*, which may be divided into twenty-four Parts, by dividing one Fourth of it into ſix Parts; and diſpoſe them, as you ſee them mark'd in the Deſign. The *Freeze*, as ſhewn up the Side, is three Fourths of the *Architrave*; and a ſwelling *Freeze* muſt have its Projection equal to that of the *Architrave*. I have ſhewn

Plate XXV

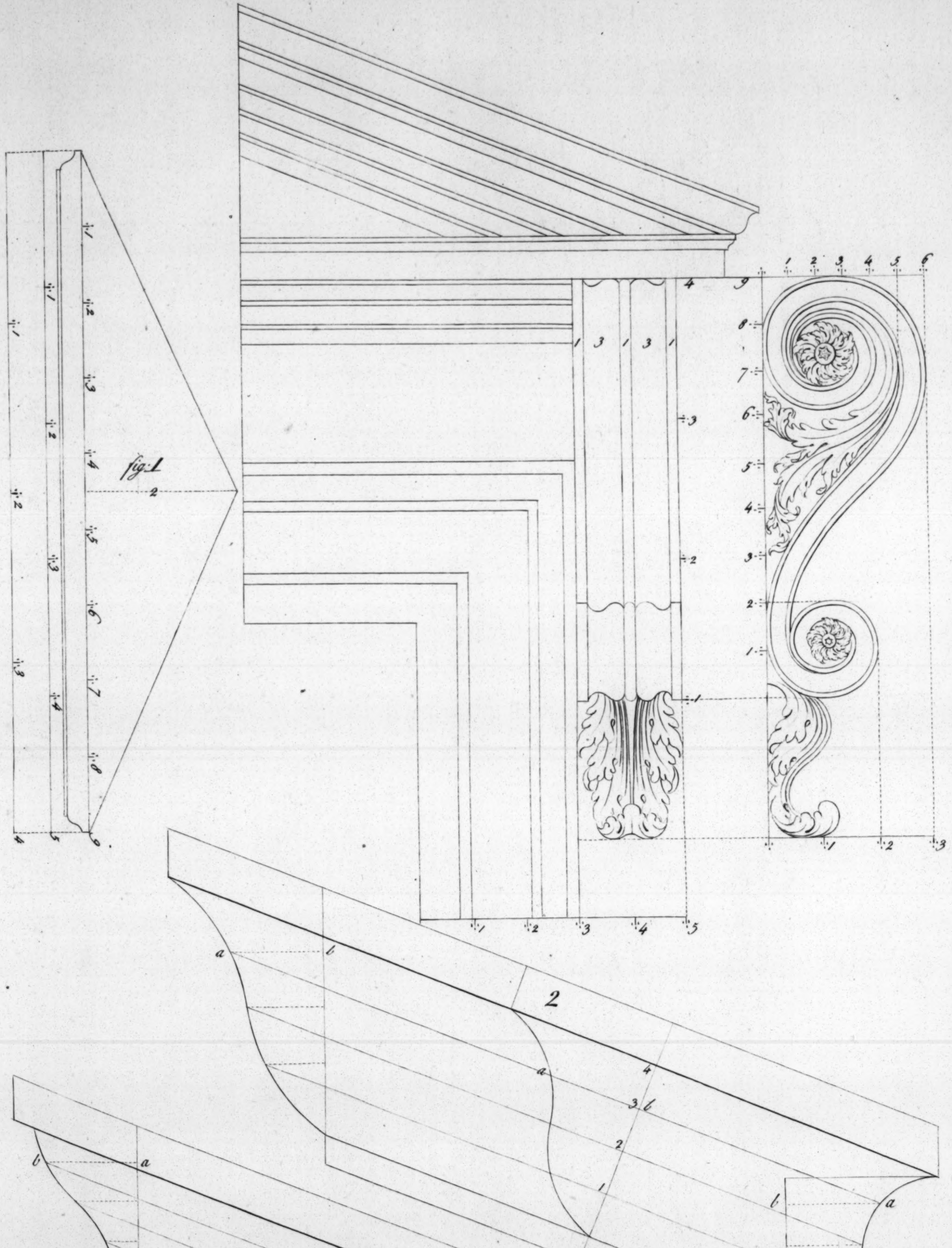
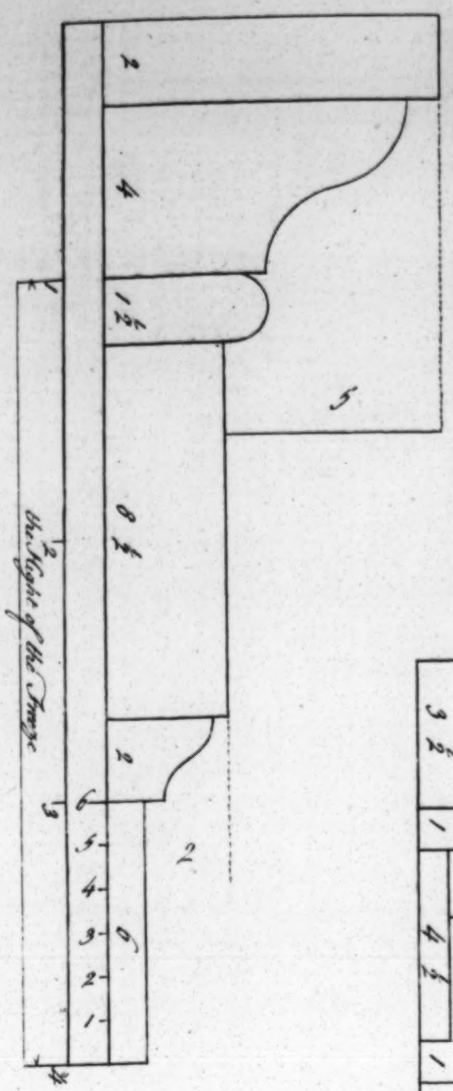


fig:1
1
2
3
4
5
6
7
8
9
1 3 1 3 1
1 2 3 4 5 6
2
a
b
4
3
2
1
3

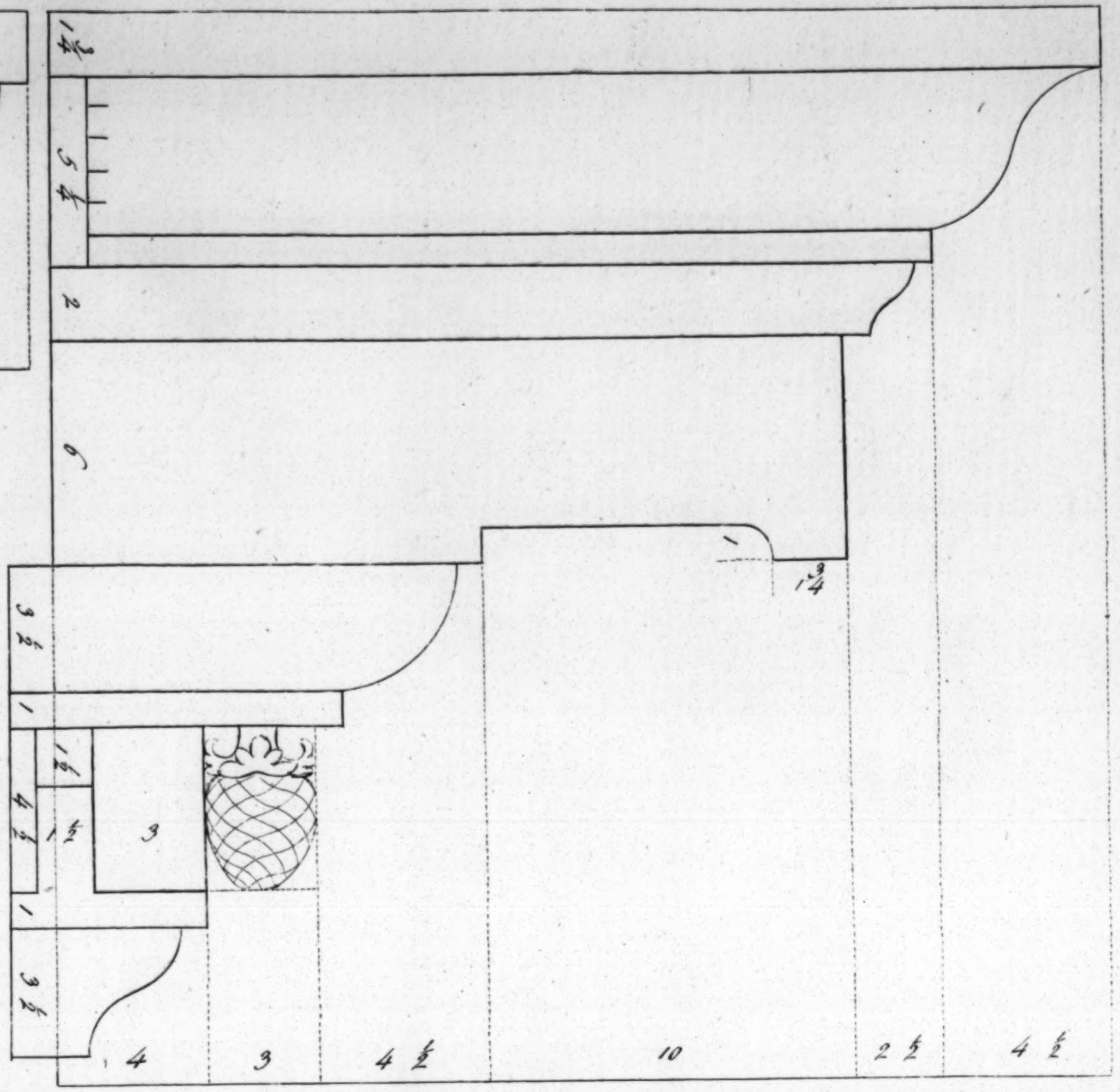
W. Swan in et de.

C. Rooker sc.

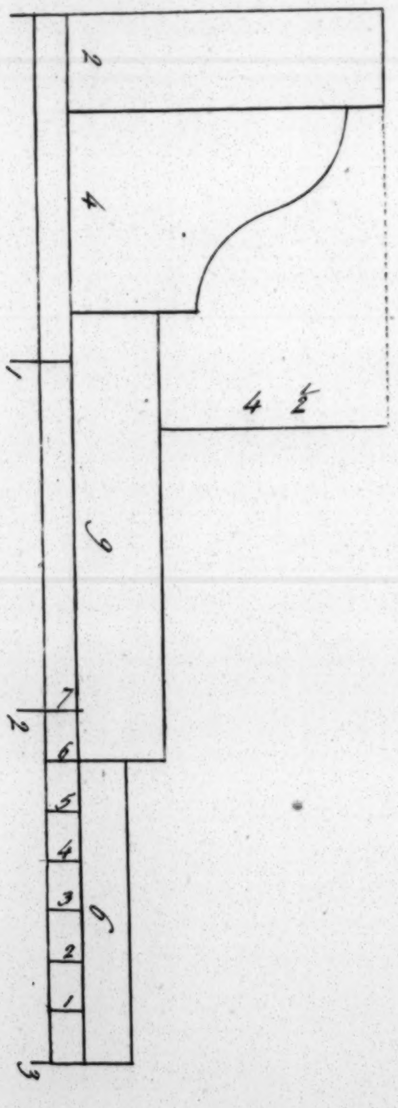
Plate XXVI.



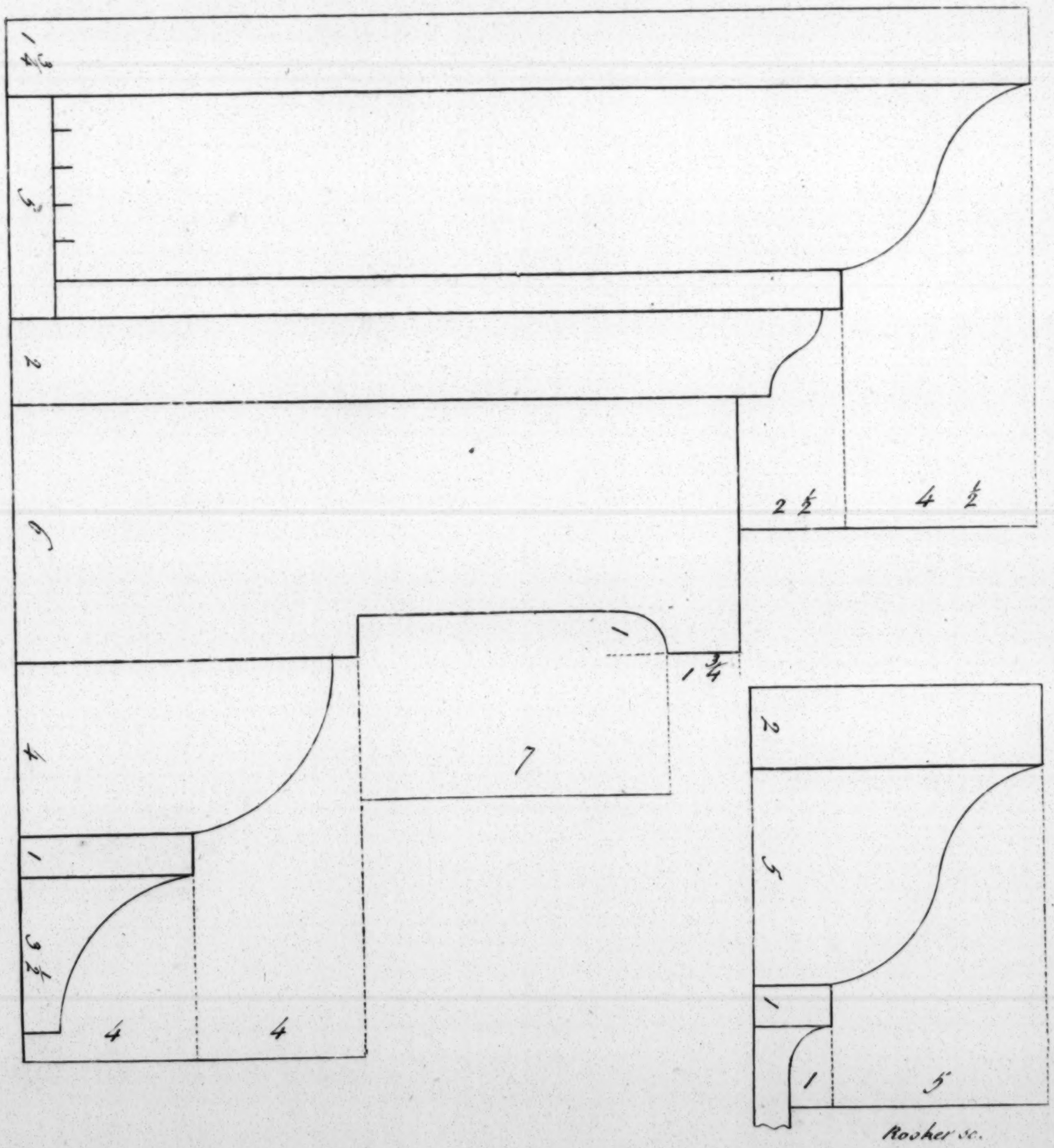
2
4
5
1 1/2
8 1/2
2
2
6
1/3 the Hight of the Frieze



1 3/4
5 1/4
1
2
6
1
1 3/4
3 1/2
1
1 1/2
4 1/2
1 1/2
3
1
3 1/2
4
3
4 1/2
10
2 1/2
4 1/2



2
4
1
4 1/2
9
2
7
6
5
4
3
2
1
6
3

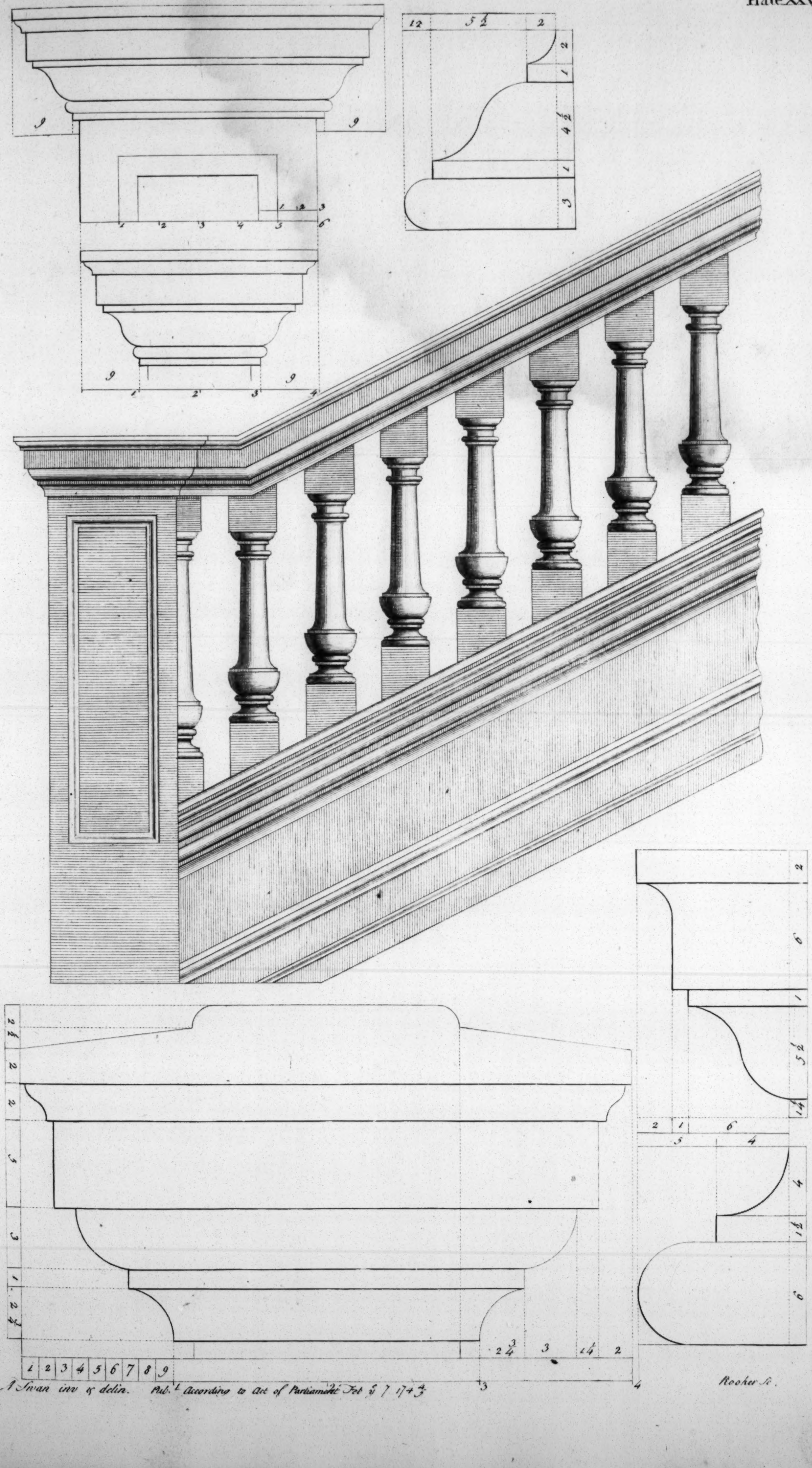


1 3/4
3
2
6
2 1/2
4 1/2
1
1 3/4
7
4
1
3 1/2
4
4
2
5
1
1
5

Ab Swan in et de

Rosker sc.

Plate XXVII


9
9
1 2 3
1 2 3 4 5 6
9
9
1 2 3 4
12
5½
2
2
1
4½
1
3
2
6
1
5½
1¼
2 1 6
5 4
4
1¼
6
2½
2
2
5
3
1
2¼
2¾ 3 1¼ 2
1 2 3 4 5 6 7 8 9
1 2 3 4

A Swan inv & delin. Pub. According to Act of Parliament Feb ye 7 174$\frac{4}{5}$ Rooker Sc.

a *Pine-Apple* to this *Bed-Mould*; but it ſometimes returns, with the Face of a *Dentil* each Way.

In the lower Deſign, the *Architrave* is divided into twenty-one Parts, by one third Part divided into Seven, as is ſhewn on the Side; and this regulates the *Cornice*, as above. The Fillets of the *Ogees* of the *Architrave* in both theſe Deſigns are drawn in their uſual Proportions; but may have full as good an Effect, if made one Fourth, or one Half of a Part more; which may be taken from the *Faſcias*.

Beneath the lower *Cornice* at the Right-hand, is an *Ogee*, with a Hollow at the Foot; which is ſometimes uſed for a *Cornice*.

The Manner of proportioning Pedeſtal Stairs.

PLATE XXVII. Stairs of this Kind are ſeldom uſed leſs than four Feet wide; for which Width I have drawn a *Rail* at large. This may be divided into four equal Parts, and one of them is the Projection of the *Mouldings*, excluſive of the Space at the Foot of the Hollow.

To the Left-hand of the *Rail* is ſhewn one of theſe Parts divided into nine; diſpoſe of theſe nine Parts to the Height, and Projection of each *Moulding*, as you ſee in the PLATE.

To the Right-hand of the *Rail*, you have a different *Cornice* and *Baſe* regulated by the ſame Method.

On the Top of the PLATE to the Left-hand is ſhewn the upper Part of a Pedeſtal.

To proportion the *Margin* and *Mouldings* of which——

Let the Width be divided into ſix equal Parts; one of them is the *Margin*, and Half that may be the *Moulding*.

Or, you may proportion this by the Scale of nine Parts below; taking ſix of them for the *Margin*, and three for the *Moulding*.

To the Right-hand of this, is the *Baſe* proportion'd to the *Rail* at large.

Obſerve, that for every Foot the Stairs exceed four in Width, you are to encreaſe the Width of the *Pedeſtal* by three Quarters of an Inch. If they are leſs then four Feet, then the Width of the *Pedeſtal* muſt be one eighth Part the Length of the Step.

Another Sort of Pedeſtal Stairs.

PLATE XXVIII. Theſe Stairs have a *Rail* and *Balluſter* different from the former.

To the Left-hand you have the *Architrave*, *Freeze*, and *Bed-mould*, for the *String-Board*, in Proportion to the *Rail* below. The *Freeze* is twenty-ſeven Parts, or three Fourths of the Width of the *Pedeſtal*.

To each *Moulding* I have ſet the Meaſures of its Height and Projection; which Method is alſo obſerved in the following Deſigns.

A Different Rail and Balluſter.

PLATE XXIX. Theſe *Balluſters* are very rich, and would, in my Opinion, produce a very good Effect, if put in Practice.

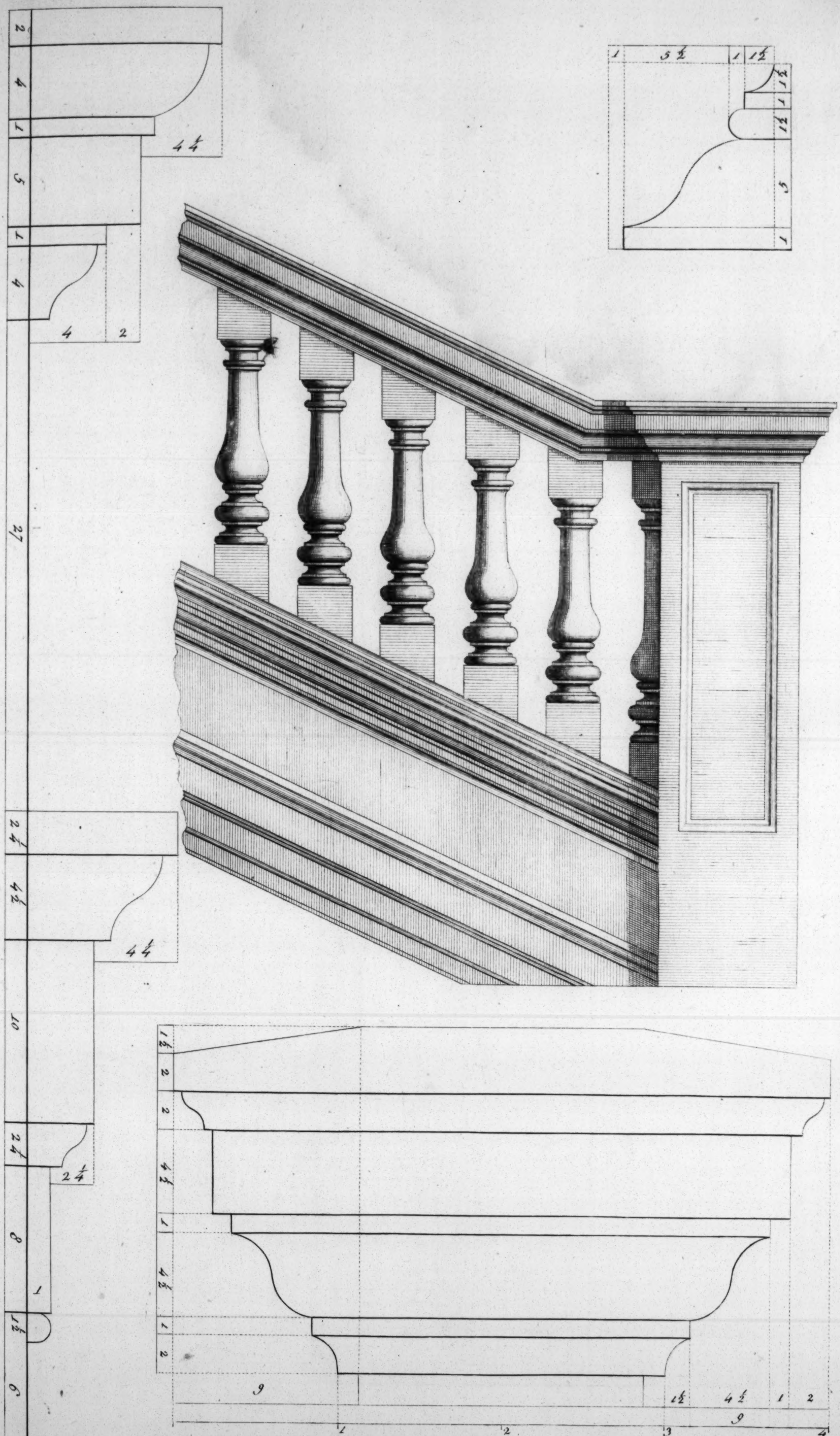
The Space betwixt each *Balluſter*, is equal to Half the Width of the *Balluſter*, which is alſo equal to the ſhorter Side of the ſquare Part at Top. The ſhorter Side of the *Plinth* is three Fourths of the Width of the *Balluſter*. And the *Balluſter*'s whole Width is equal to the Width of the riſing Part, on the upper Side of the *Rail* drawn at large.

Another Sort of Pedeſtal Stairs.

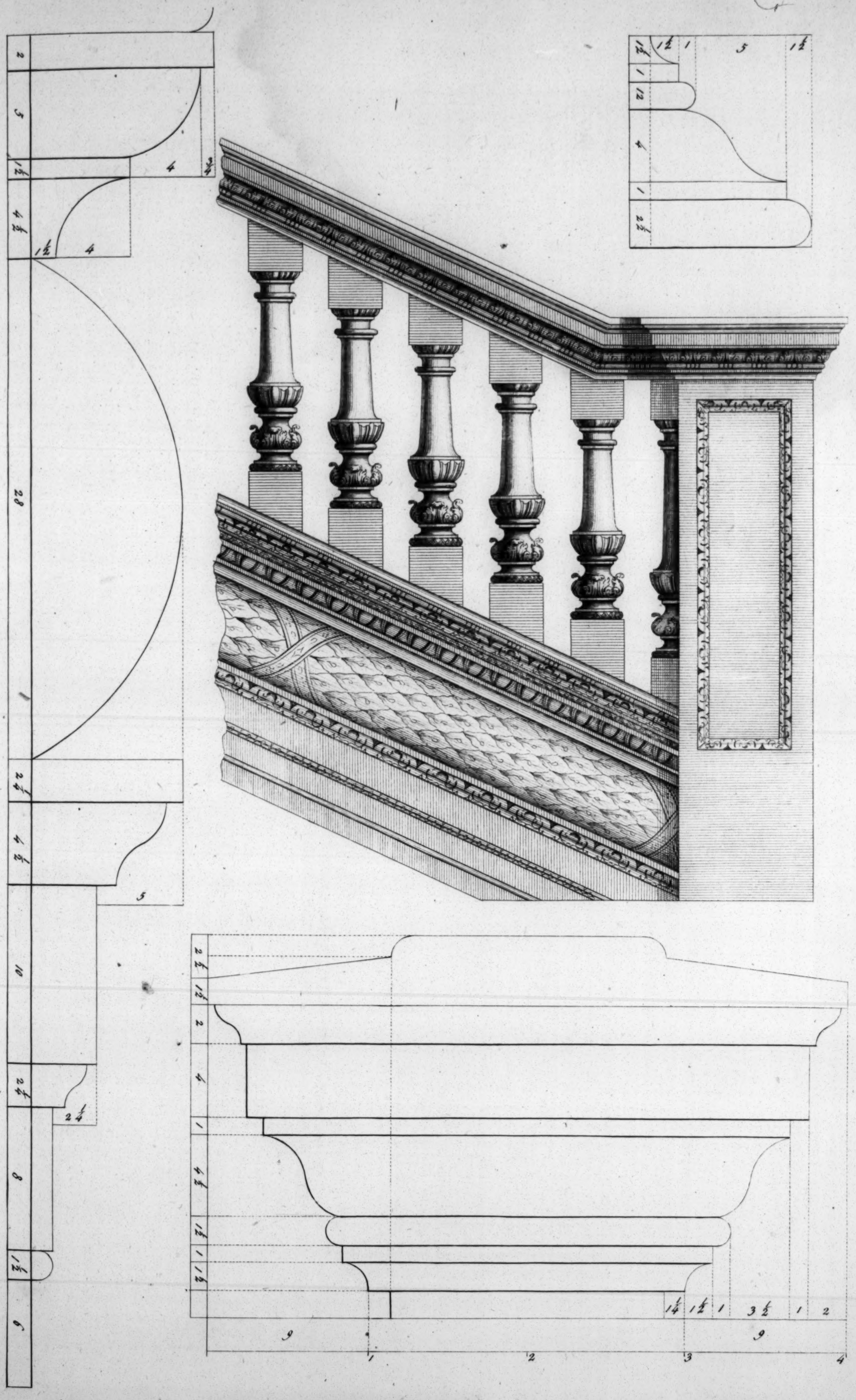
PLATE XXX. Theſe Stairs have a different *Rail*, and *Balluſters*, ſtill richer than the foregoing. The Meaſures of the reſpective Parts are proportion'd as before.

This PLATE alſo exhibits two different Sorts of *Freezes*; that over the Deſign with Oak-Leaves and Acorns.

The


2
4
1
4¼
5
1
4
4
2
27
2¼
4½
4¼
10
2¼
2¼
8
1
1½
9
1
5½
1
1½
1½
1
1½
5
1
1½
2
2
4½
1
4½
1
2
9
1½
4½
1
2
9
1
2
3
4

A. Swan inv. et delin Pub. According to Act of Parliament Feb ye 8 174 4/5 Rooker sc.


2
3
1½
4½
1½
4
4
¾
28
2¼
4½
5
10
2¼
2¼
8
1½
6
1½
1½
1
5
1½
1
1½
4
1
2½
2½
1½
2
4
1
4½
1½
1
1½
1¼
1½
1
3½
1
2
9
9
1
2
3
4

A. Swan inv et delin. Pub. According to Act of Parliamet Feb. 9 174$\frac{4}{5}$ E. Rooker sculp.

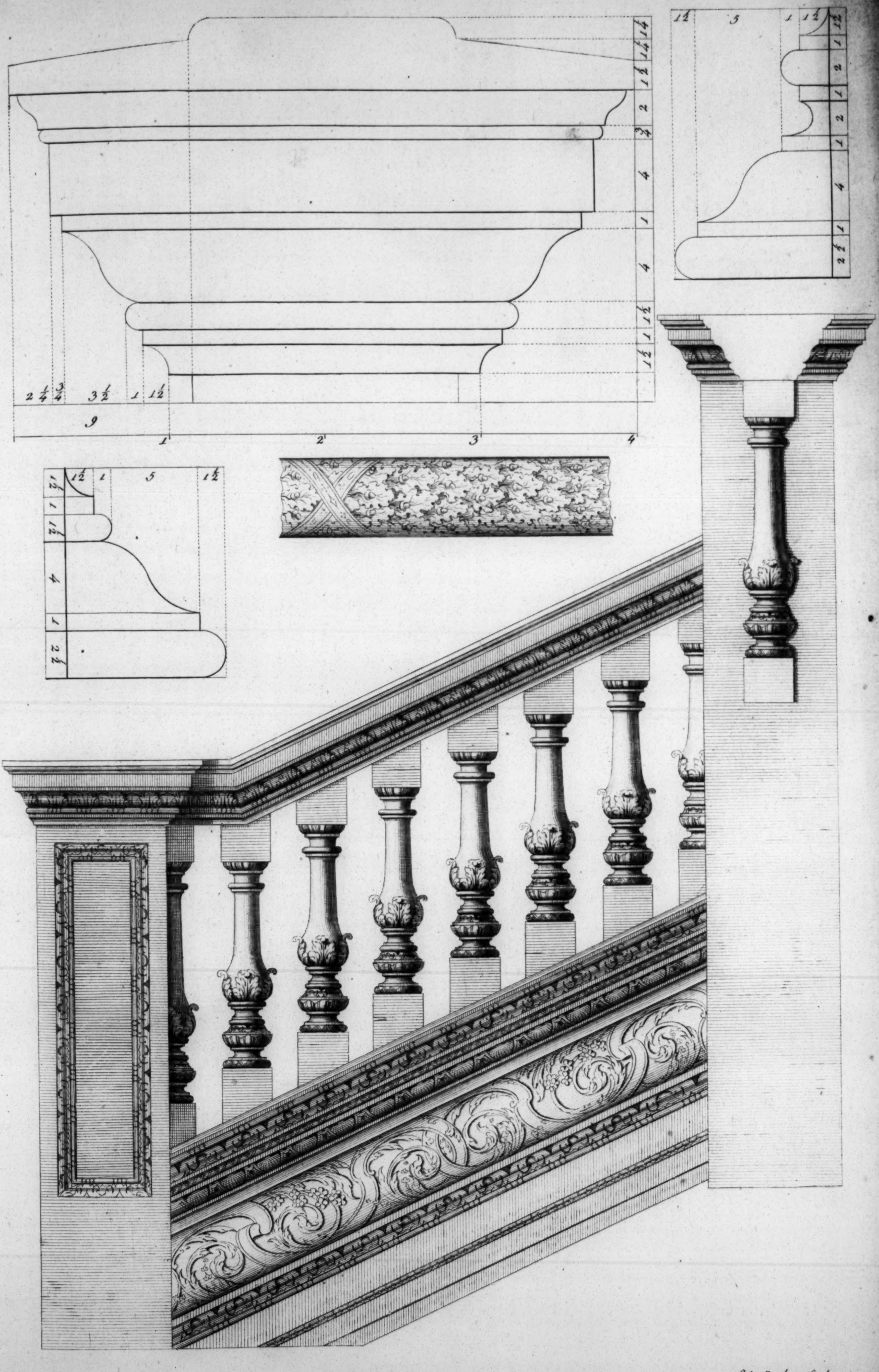

1¼
1¼
1½
2
¾
4
1
4
1½
1
1½
2 ¼ ¾ 3½ 1 1½
9
1
2
3
4
1½ 5 1 1½
1½
1
2
1
2
1
4
1
2½
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Plate XXXI

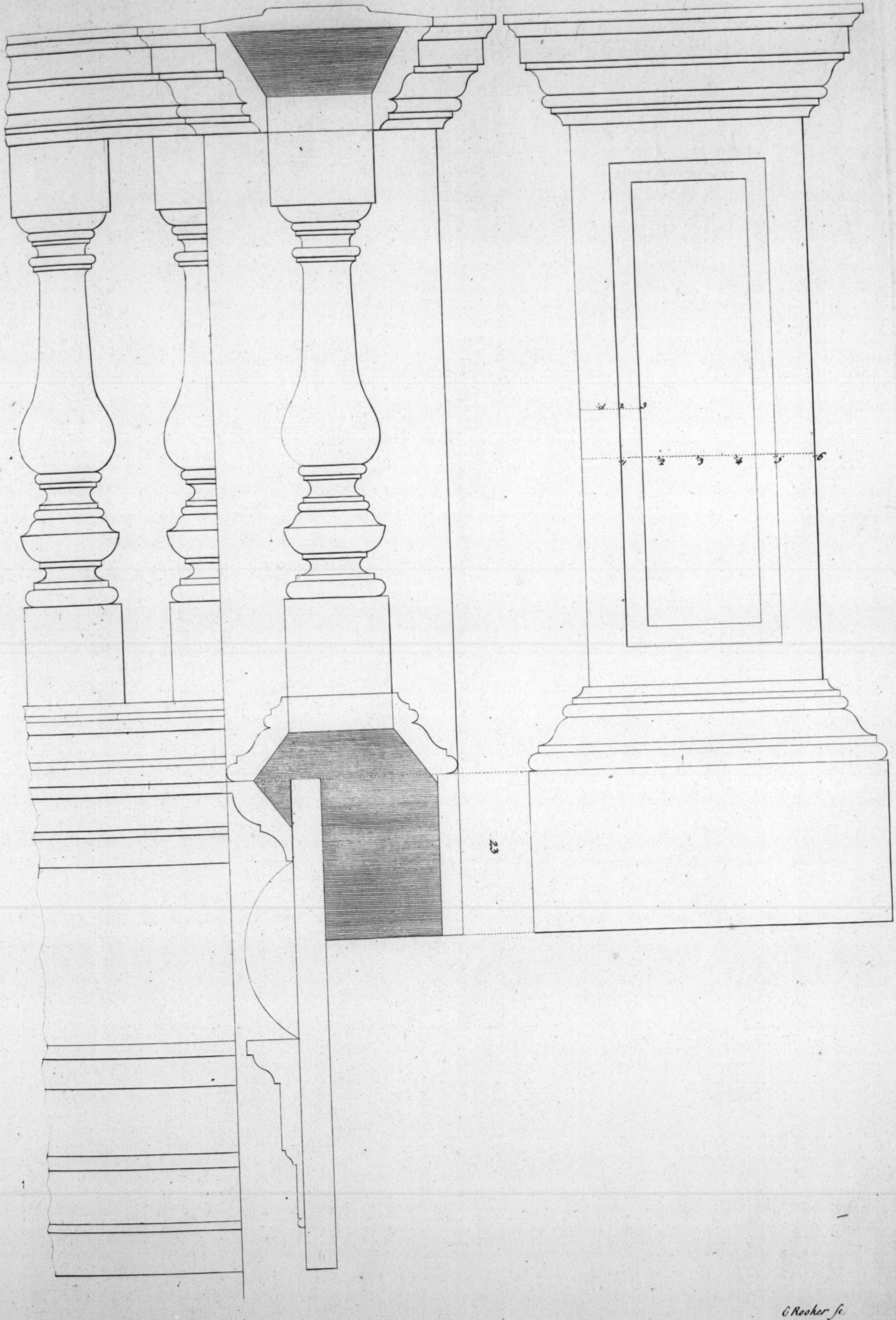
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Plate XXXII

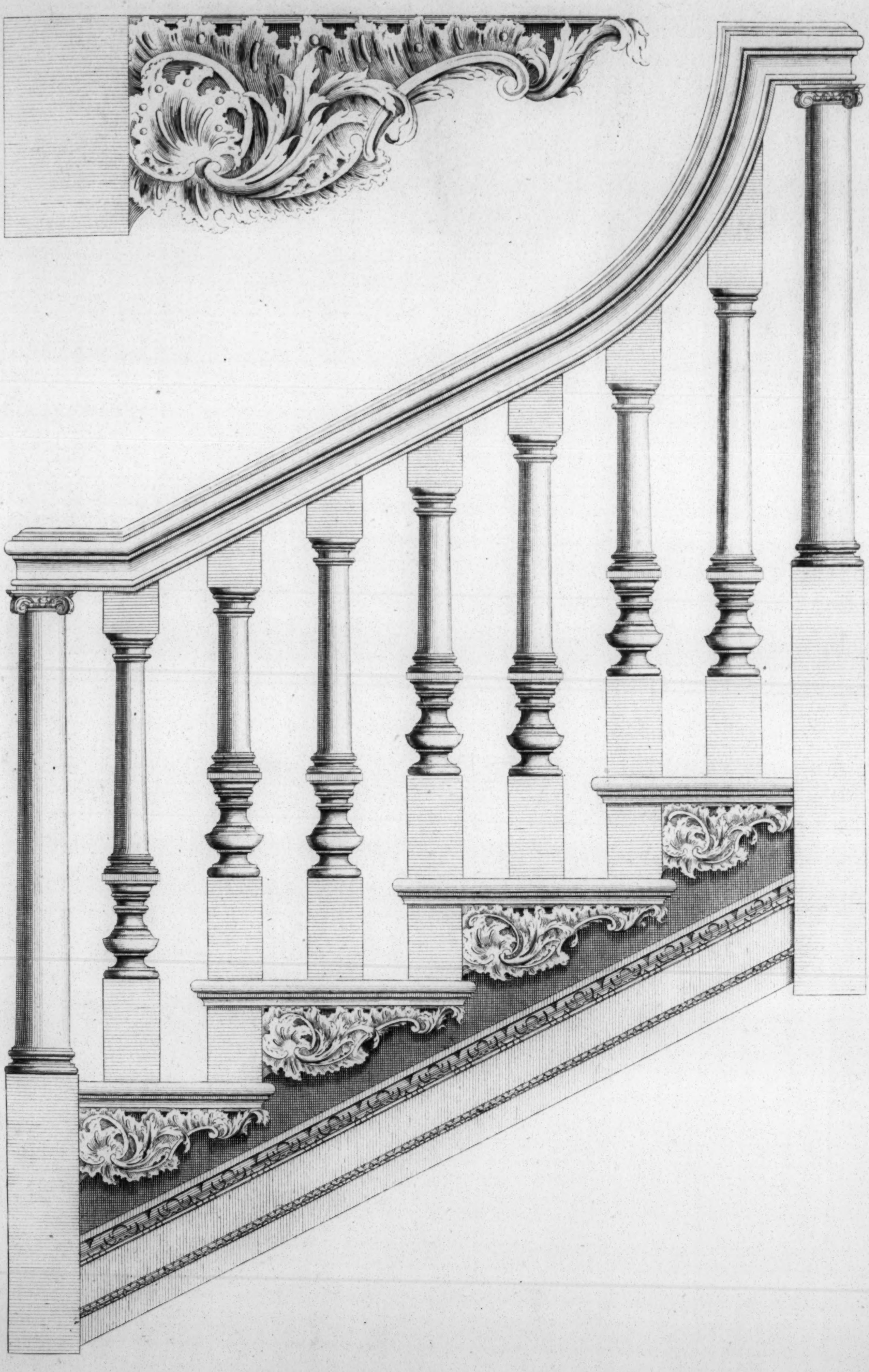

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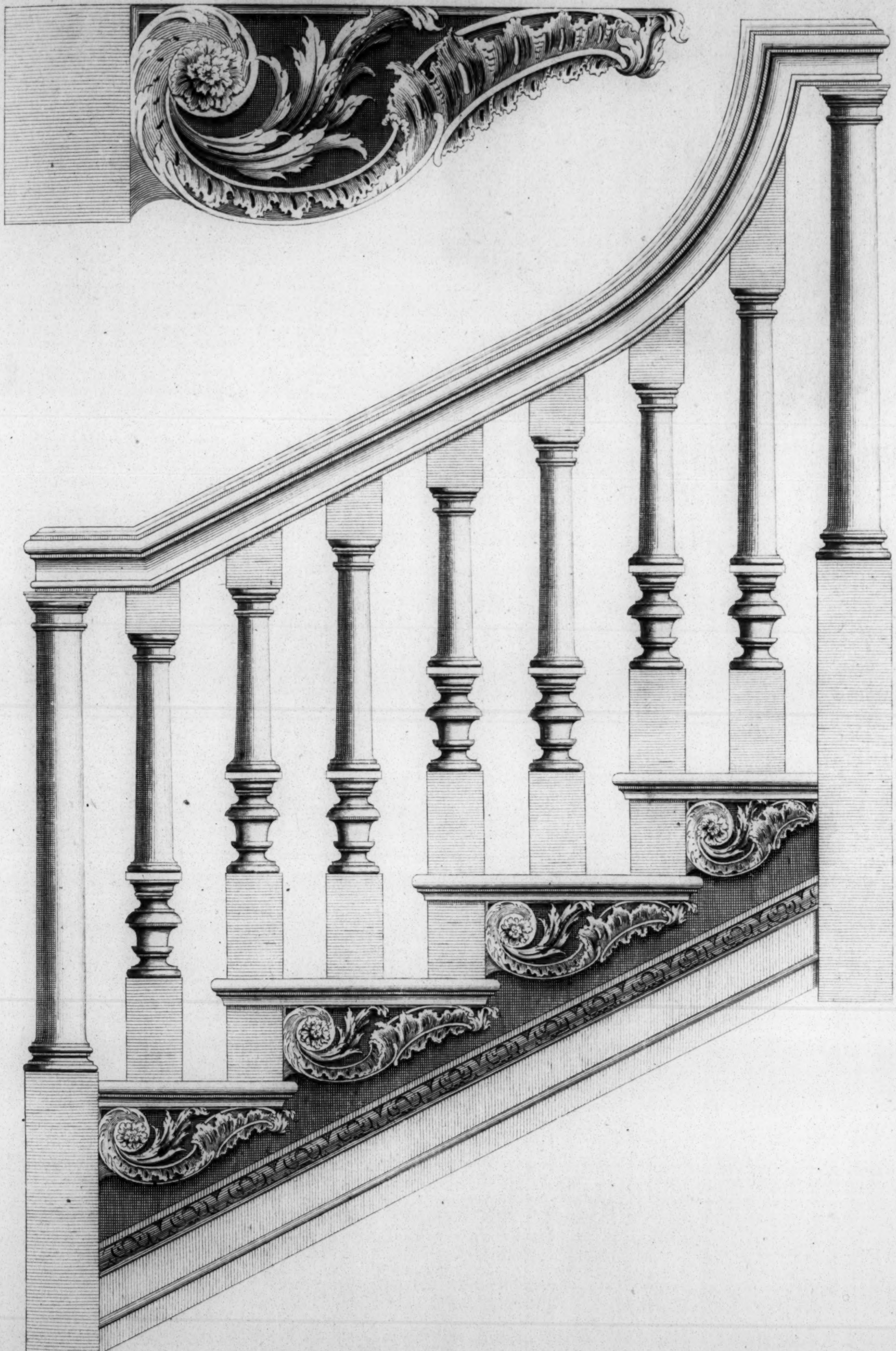
Plate XXXIII



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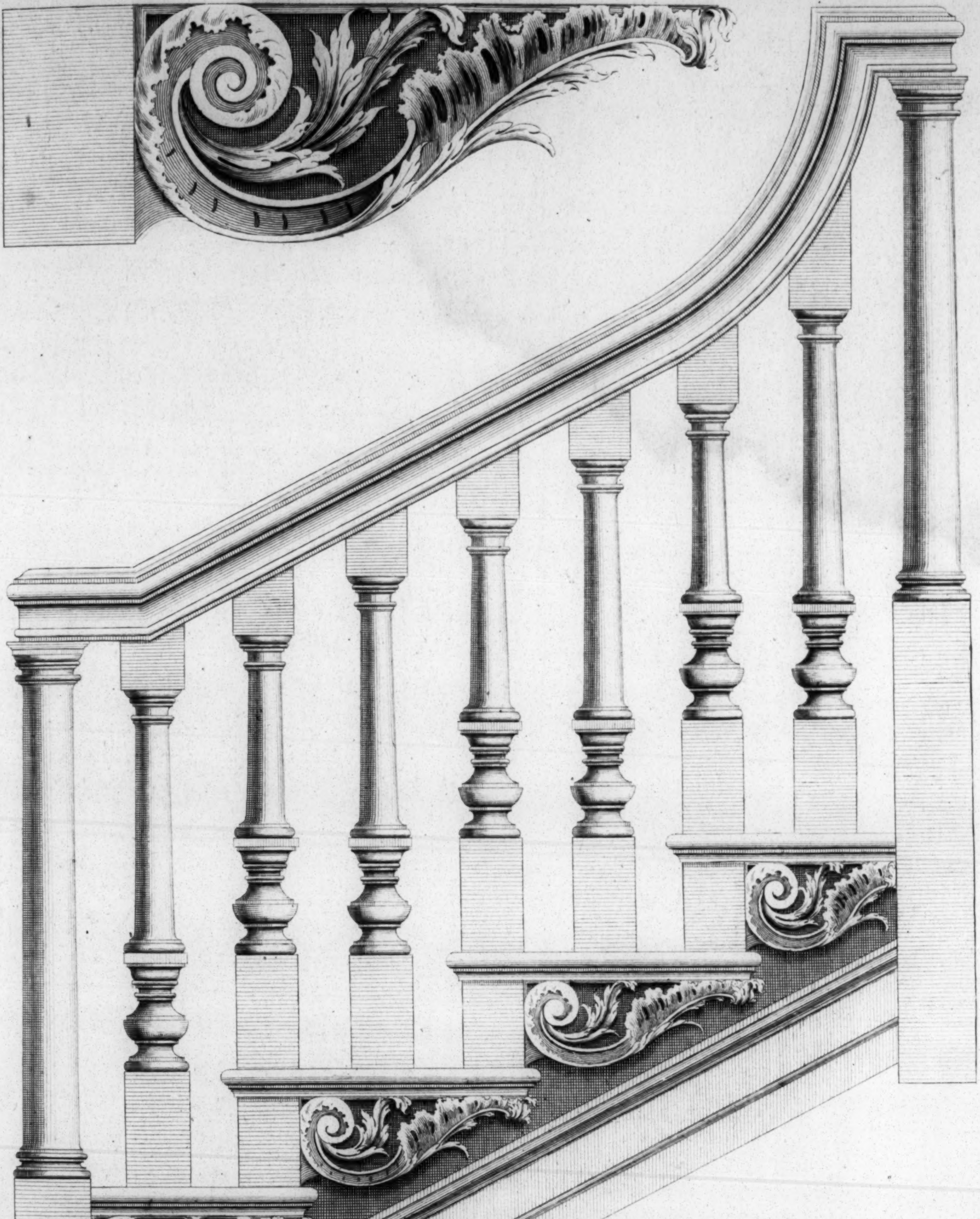

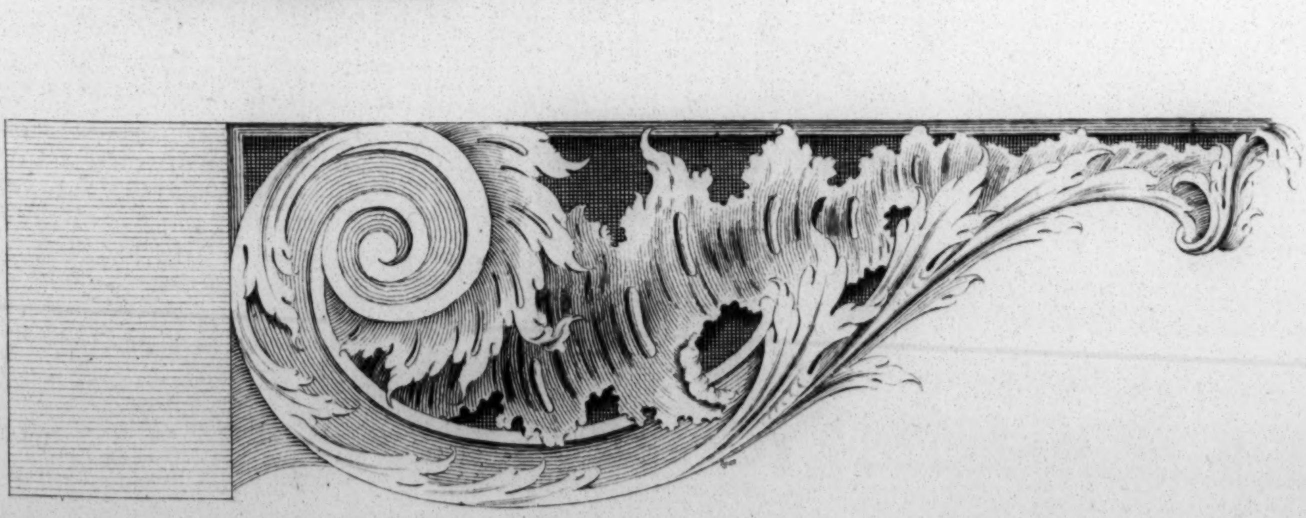

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The Section of the Rail.

PLATE XXXI. This PLATE repreſents the Section of the *Rail*, with its *Baſe*, *Architrave*, *Freeze*, *Bed-mould*, and *String-board*. The *Plinth*, with the twenty-three Parts ſet to it, ſtands along the Landing on the Gallery. The other Part of the *String-board* which falls below, covers the Joiſts.

To the Right is a *Pedeſtal*, with its *Baſe* turned round. Either of theſe Methods may be uſed, as is thought moſt proper; but I take the former to be the beſt Way, when the *Baſe* finiſhes againſt the *Pedeſtal*.

A Flight of Bracket Stairs.

PLATE XXXII. This PLATE exhibits a Flight of four Steps of very rich *Bracket-Stairs*; over which is a *Bracket* drawn at large. For the Length of the *Balluſter*, take the perpendicular Height from the *Noſe* of the *Step*, to the under Side of the *Rail*, which ought not to exceed two Feet two Inches.

PLATE XXXIII. A Flight of Stairs, with very rich Brackets.

PLATE XXXIV. A Flight of Stairs, with two different Brackets, at large.

A Stair-Caſe with two Flights.

PLATE XXXV. Here I muſt advertiſe the Reader, that I by no Means intended to confine myſelf to the Rules of *Perſpective*; but to repreſent the Deſign in the moſt *uſeful* Form; and therefore continued the Steps all parellel to the firſt viſual Line; for had they all directed to the Point of Sight, it would have made the Deſign *uſeleſs* for what is intended.

FIG. II. Shews the Manner of drawing the *Ramp*; which is to riſe, equal to the Height of the firſt Step of the next Flight, and as much as its *Kneeling*; as is ſhewn by the *Ramp* interſecting the *Rail* of the ſecond Flight.

FIG. I. Shews you how to make the two *Knees* agree with each other, which is done by drawing the dotted Lines from the Middle of the *Aſtragal.*

FIG. III. Shews the ſtraight *Rail*, interſecting a circular *Cap.*

FIG. IV. Shews the Manner of *Dove-tailing* the *Riſer* into the Step. And

FIG. V. Exhibits the Plan of the Stairs.

A Stair-Caſe with three Flights.

PLATE XXXVI. This Plate repreſents a *Stair-Caſe* of three Flights, with its Landing *Rail*; and under the third Flight you have two different Sorts of *Rails*.

FIG. I. Shews the ſolid Part of the Step out of which the *Scroll* is formed; where *o* repreſents the *Over-ſail* of the Step; *b* the Thickneſs of the *Bracket*, with its *Mitring* to the *Riſer*; and *s* the *String-board.*

FIG. III. Shews the *Scale* for drawing the *Scroll* of FIG. II. To perform which; ——Take the Diſtance from 1 to the Centre, in FIG. II. and ſet it from 1 to the Centre in FIG. III. Divide that Extent into three Parts, then ſet four ſuch Parts on the upper Side of the *Scale*, and draw the Line from 4 to 1; ſet one Foot of your Compaſſes at 4, and ſtrike the Circular Line, let that be divided into twelve equal Parts, and then draw Lines from 4 through thoſe Diviſions, to the upright Line.

[The *Scale* being thus made, then by it to draw the *Scroll.*]

Inſtead of taking from 1 to the Centre, or from 2 to the Centre in the Scale, as was ſhewn for the *Ionic Scroll*, you are here to take the Mean betwixt them; then ſet one Foot of your Compaſſes in 1, and deſcribe a Stroke at *c*; take the ſame Diſtance, and with one Foot in 2, croſs the Stroke at *c*, then from *c*, turn the Part from 1 to 2, and proceed in the ſame Manner; for if the Diſtance were taken in the *Scale* from 1 to the Centre, it would ſtrike the Circle too flat, and if it be taken from 2, it then ſtrikes the Circle too quick.

When this is well underſtood, there will be no great Difficulty in drawing the *Scroll* over FIG. I. which throws itſelf out farther in Proportion than that in FIG. II. for this will always be the Caſe, when the upper Line of the *Scale*, which conſiſts of four Diviſions in FIG. III. is made but with three Diviſions or leſs; whence it appears, that the upper

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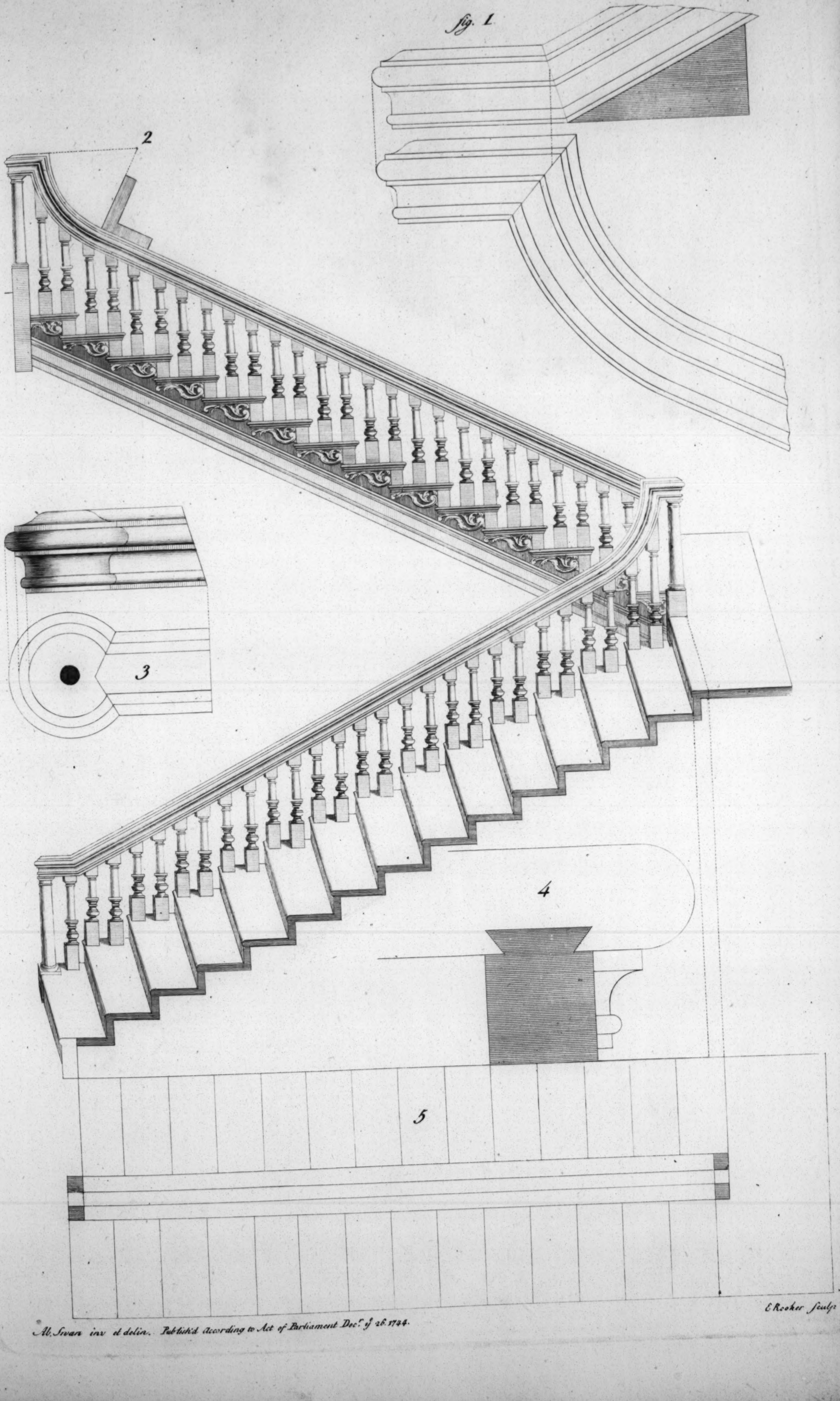

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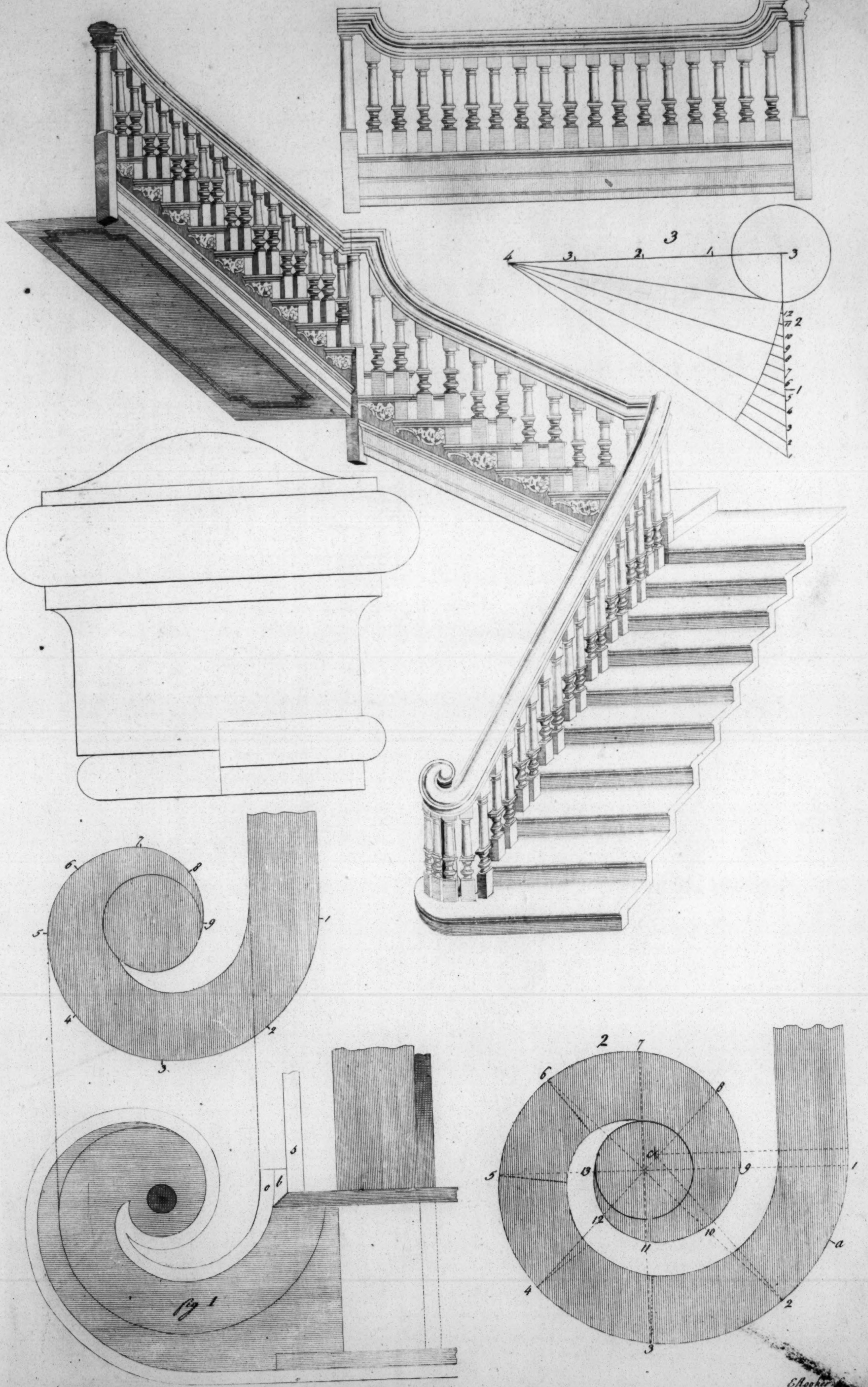
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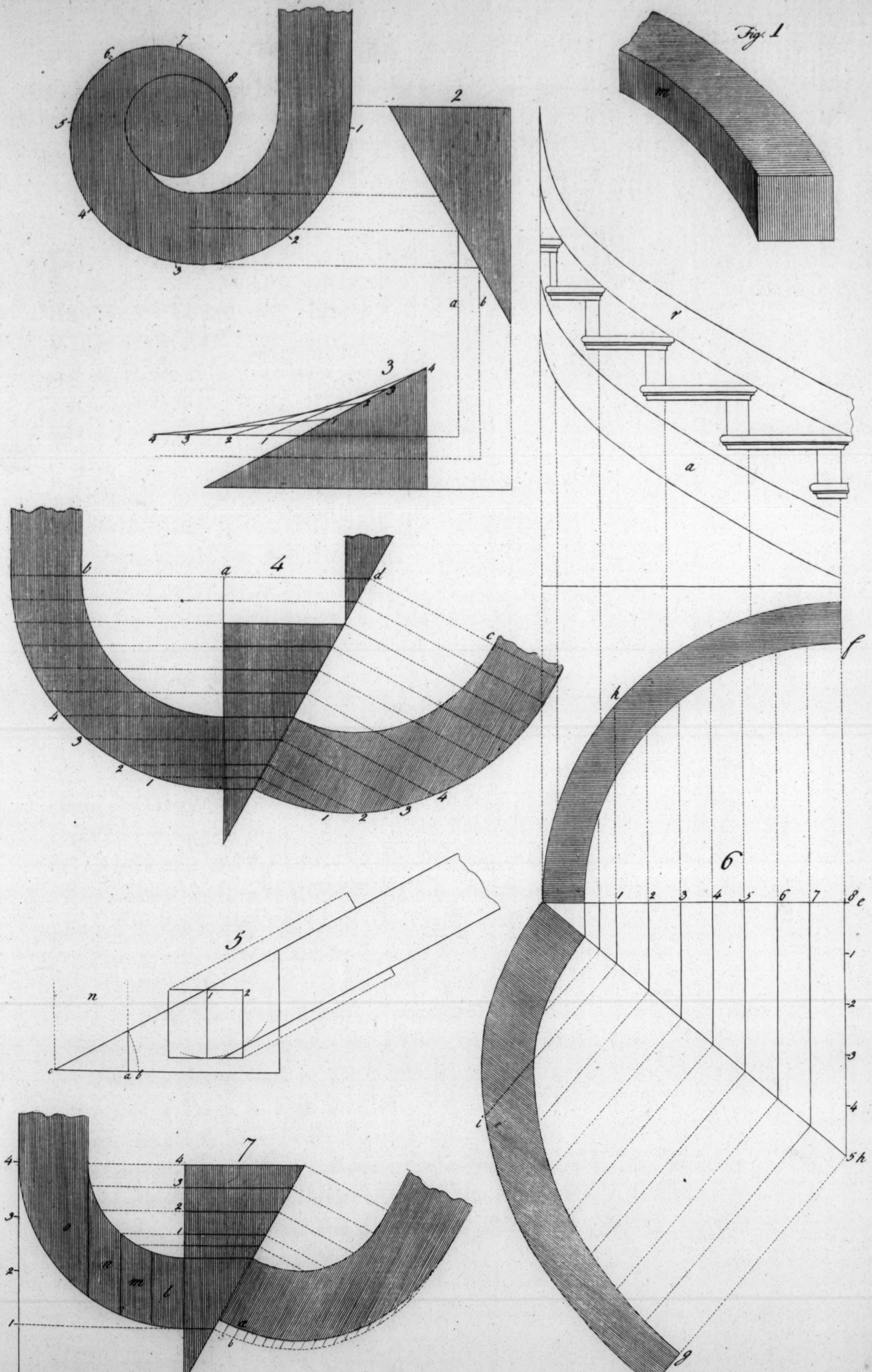
Plate XXXVII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Line of the *Scale* may be drawn at what Length you pleaſe, according as you would bring in, or keep out the the *Scroll.*

The Manner of ſquaring Twiſt-Rails.

PLATE XXXVII. FIG. II. Exhibits the *Pitch-board*, to ſhew what Part of the *Step*, the twiſted Part of the *Rail* contains; the three dotted Lines drawn from the *Rail* to the *Pitch-board* repreſent the Width of the *Rail*, that from the Middle ſhews the Ridge, or Middle of the *Rail*, which is to be kept level. The dotted Lines *a*, and *b*, ſhew how much half the Width of the *Rail* turns up from its firſt Beginning to 3.

FIG. III. Shews the ſame *Pitch-board*, with the Manner of the *Rail's* turning up. If the Sides of the twiſted Part of the *Rail*, be ſhaped by the *Rail-Mould*, ſo that they direct down to its *Ground-Plan*; that is, the upper Side of the *Rail* being firſt ſtruck by the *Mould*, then apply the *Mould* to the under Side, as much back as the *Bevel* of the *Pitch-board* ſhews, by being ſtruck on the Side of the *Rail*, and then FIG. III. being applied to the Outſide of the *Rail*, from its firſt twiſting Part to 3, will ſhew how much Wood is to be taken off.

FIG. V. Exhibits the Square of the *Rail*, with the *Raking*-Line of the *Pitch board*, drawn through the Middle on the upper Side; then draw the Depth of the Side of the *Rail* parallel to this, and the dotted Lines from the Diagonal of the *Rail*; theſe Lines ſhew what Quantity of Wood will be wanting on the upper and lower Sides of the *Rail.* Set your Compaſſes at *c*, and draw the Circular Stroke from the *Raking* Part of the *Pitch-board* to *b*, take the Diſtance *a b*, and transfer it from *a* to *b*, in FIG. VII. the ſeveral Diſtances thus found, may be ſet at any Number of Places, ranging with the ſtraight Part of the *Rail*; and it then forms the Width of the *Mould*, for the twiſting Part of the *Rail.*

FIG. VII. Shews the Sweep of the *Rail.* The *Rail* cannot be fix'd leſs than one fourth Part from the *Noſing*, or Front of the Step.

The remaining Part of the *Pitch-board* may be divided into any Number of Parts, as here into four; from theſe Diviſions draw Lines acroſs the *Pitch-board* to the *Raking*-Line, then take the Diſtances from the Ground-Line of the *Pitch-board* to the Plan of the *Rail*, and ſet them perpendicular from the *Raking-Line* of the *Pitch-board*; ſo ſhall theſe Diviſions, when the *Rail* is in its proper Poſition, lay directly over the Diviſions on the *Ground-Plan.*

In this Figure *l*, *m*, and *n*, riſe as much above *o*, as the dotted Line in FIG. V. does above the Width of the *Rail*; and they ſink as much below *o*, as the other dotted Line in FIG. V. falls below the Width of the *Rail*; the ſame Thickneſſes muſt be glued upon *o*, tho' the greateſt Part will come off in ſquaring. The Reaſon of placing the Letters, *l*, *m*, and *n*, where you ſee them, is, that they might not obſtruct the ſmall Diviſions of the *Rail-Mould*.

FIG. IV. Shews how to find the *Rail*, when it takes more than one *Step*. The remaining Part of the *Pitch-board* is divided into four Parts, as before in FIG. VII. and it takes in two ſuch Parts of the next *Step*. Draw Lines from theſe Diviſions to the Diagonal of the *Pitch-board*, as in FIG. VII. then take the Diſtance *a b*, and ſet it from *c*, to *d*, and ſo proceed with the other Diviſions.

Here is alſo ſhewn another Way to find the Outſide of the *Rail-Mould*. Draw all the Diviſions acroſs the *Plan* of the *Rail*; then take the Diſtance from the Ground-Line of the *Pitch-board* to 4, transfer it from the Diagonal of the *Pitch-board* to 4 on the *Rail*; and ſo proceed with the other Diſtances. Then, when the *Rail* is put in its proper Poſition, *c* will be perpendicular to *b*, and all the Diviſions, as, 1, 2, 3, 4, *&c.* in the *Rail*, will be perpendicularly over 1, 2, 3, 4, *&c.* in the *Ground-Plan*.

FIG. VI. Shews the *Plan* of a *Rail* of five Steps.

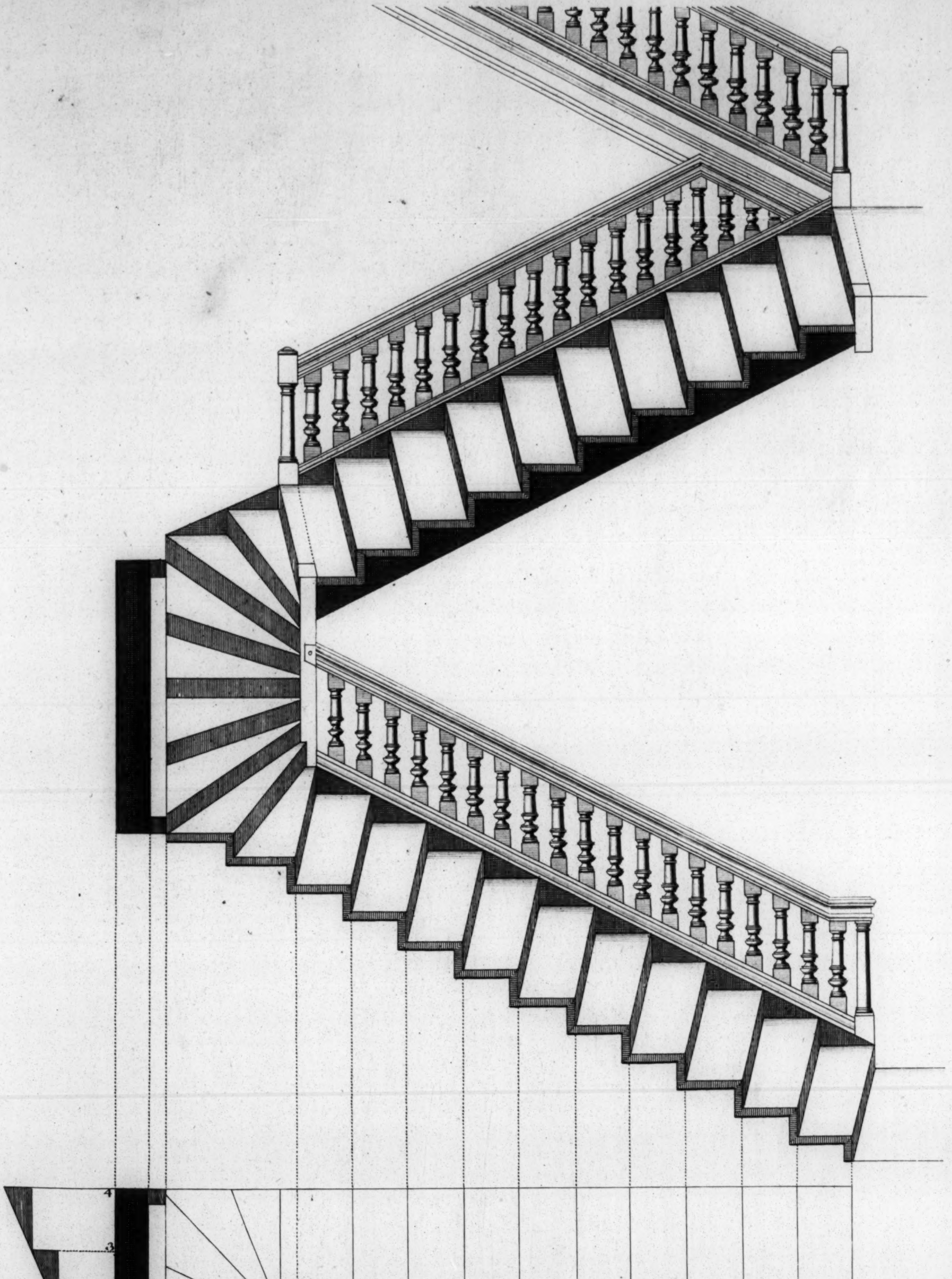
To find the *Rail*,——ſet five Diviſions, as from *e*, to *h*, which is the Height of the five Steps; draw the Diagonal from *h*, to the *Plan* of the *Rail*; then take the Diſtance *e f*, and transfer it from *g*, to *h*, and proceed in the ſame Manner with the other ſeven Diſtances.

To find the Width of the *Rail-Mould*——draw the Lines acroſs the *Plan* of the *Rail*, as at *k*, ſet that Diſtance from the Diagonal to *i*; and ſo proceed with the reſt, as was ſhewn in FIG. IV.

Having formed the Sides of the *Rail*, perpendicalar to its *Ground-Plan*, and having ſquared the lower End of the *Rail*, then take a thin Lath, and bend it within the *Rail*, as is repreſented by *m*, in FIG. I.

This is the readieſt Method for ſquaring a *ſolid Rail*; but if the *Rail* be bent in the Thickneſſes, the *Noſing* of the Steps muſt be drawn upon a *Cylinder*, or ſome other ſolid Body of a ſufficient Width, to contain the Width of the *Rail*, or *String-board*.

Plate XXXVIII



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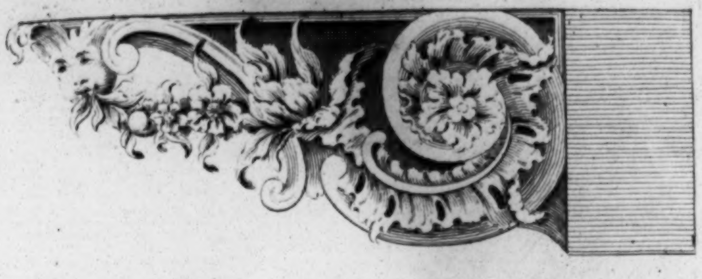

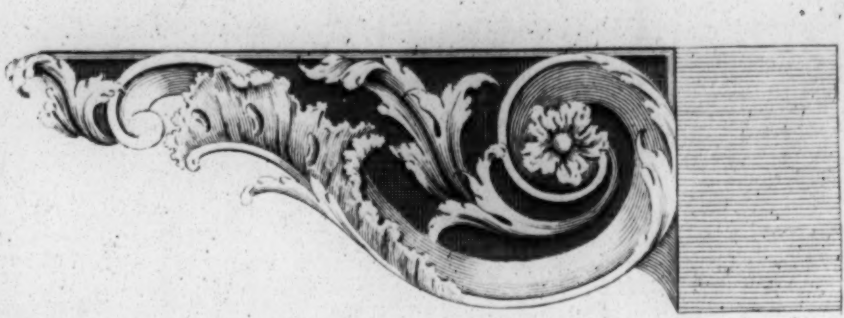

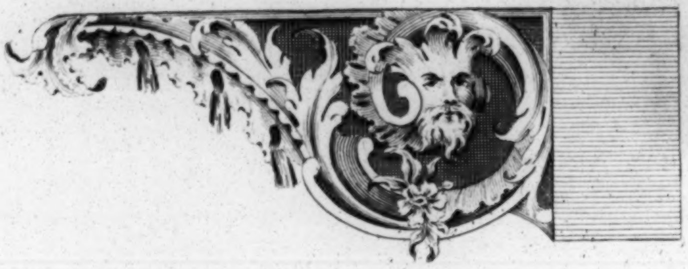

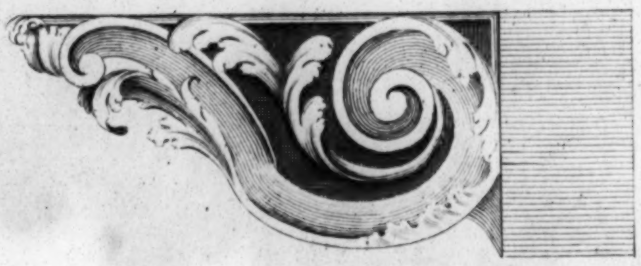

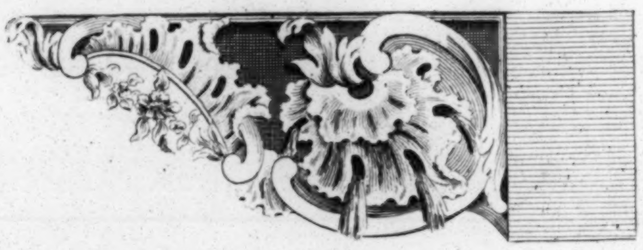

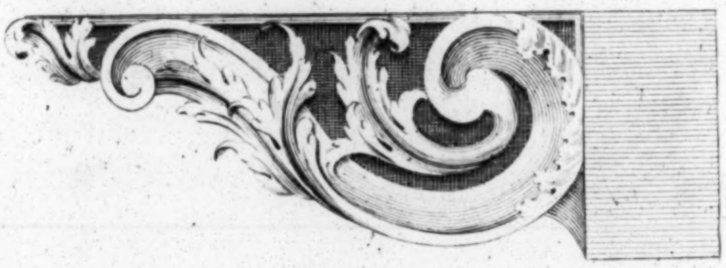

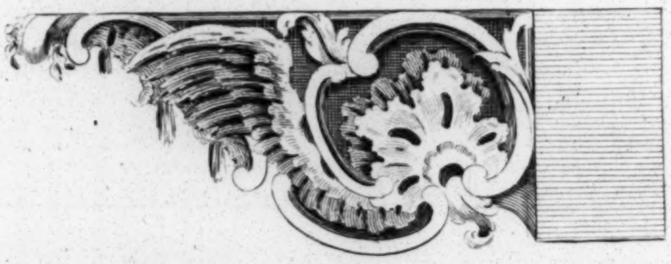

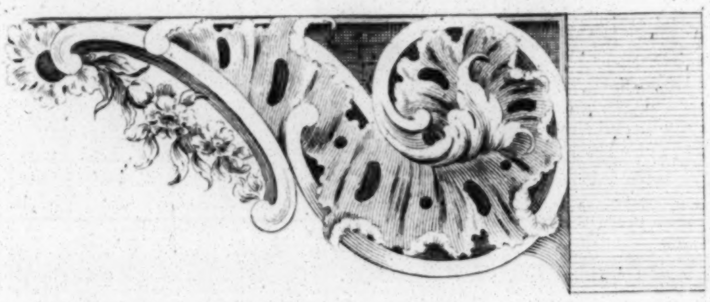

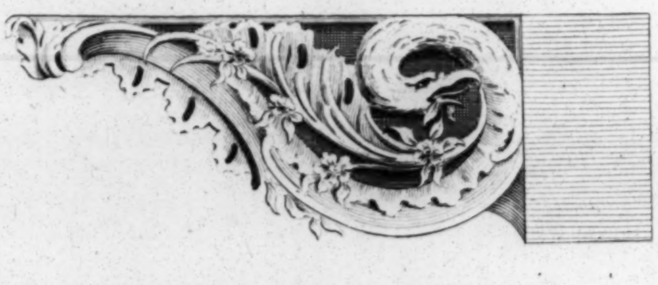

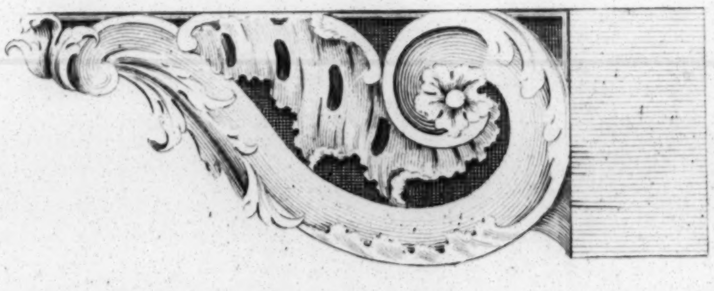

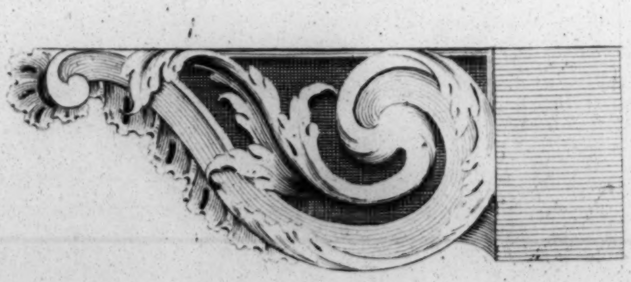

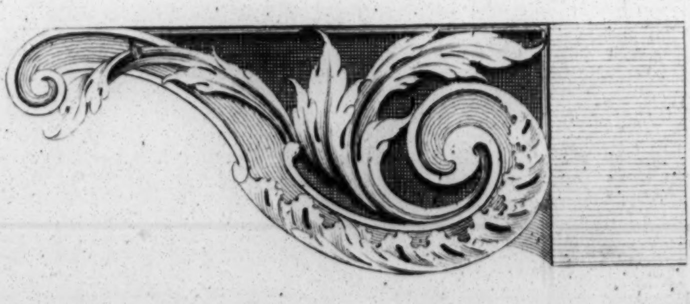

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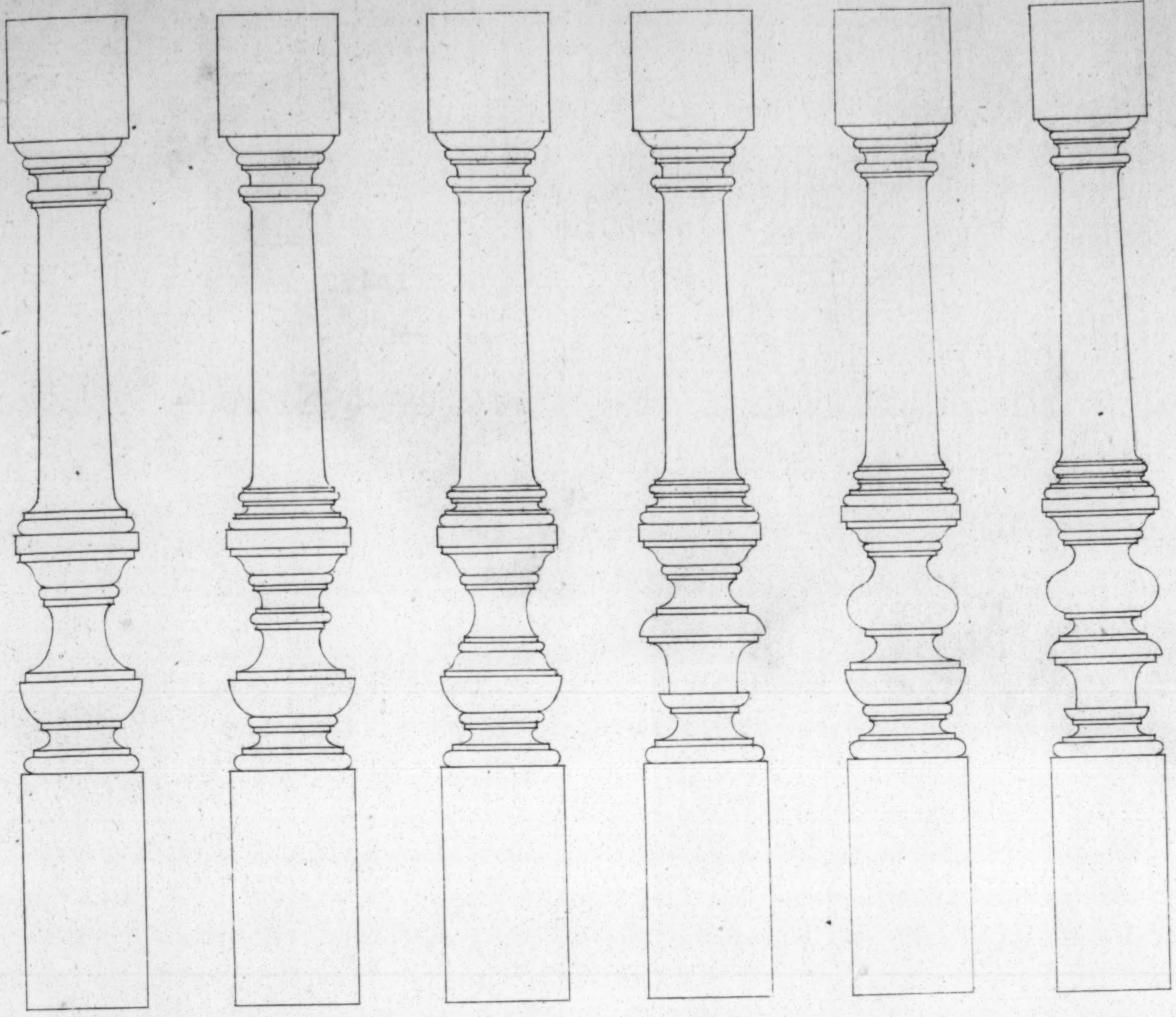

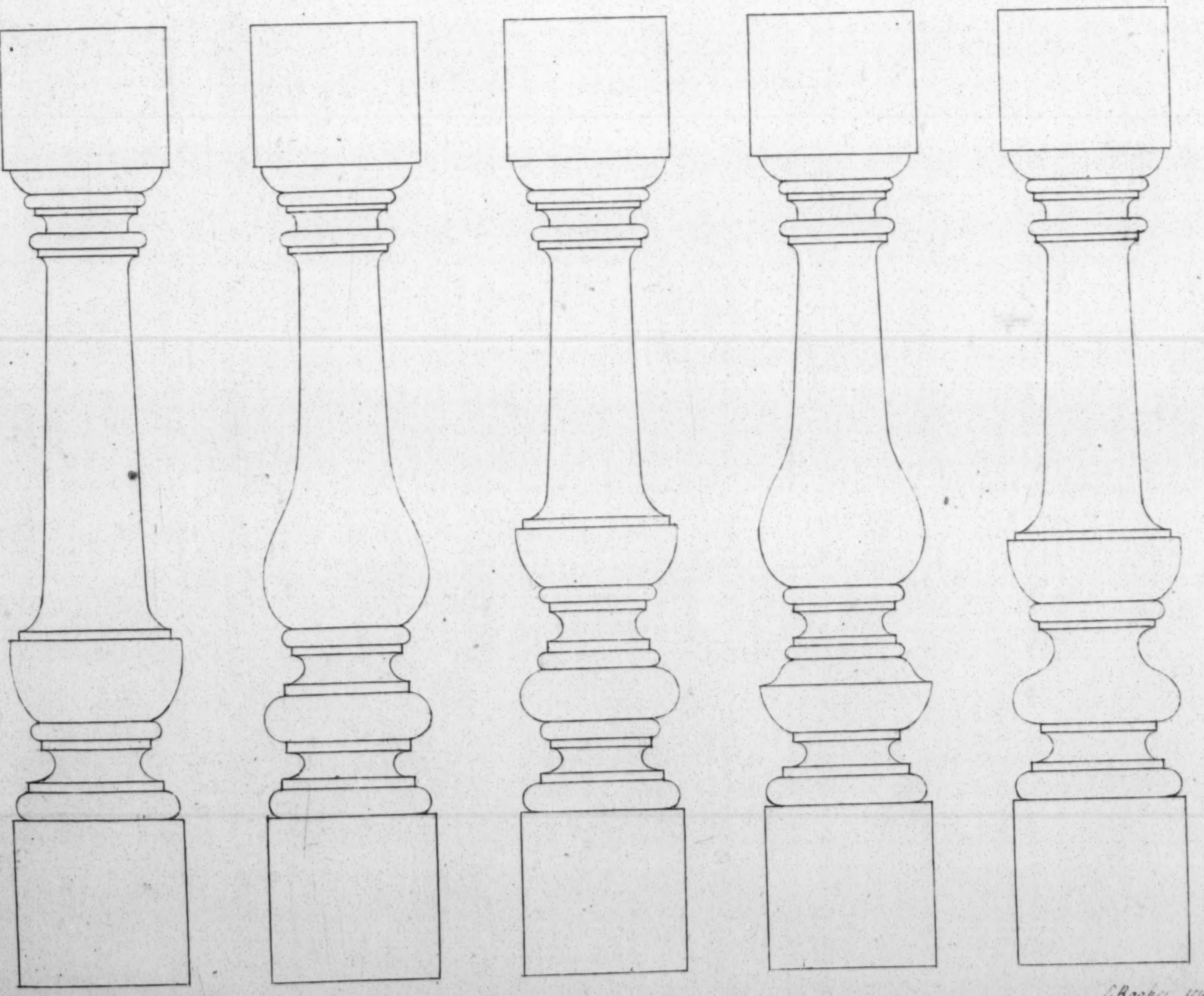

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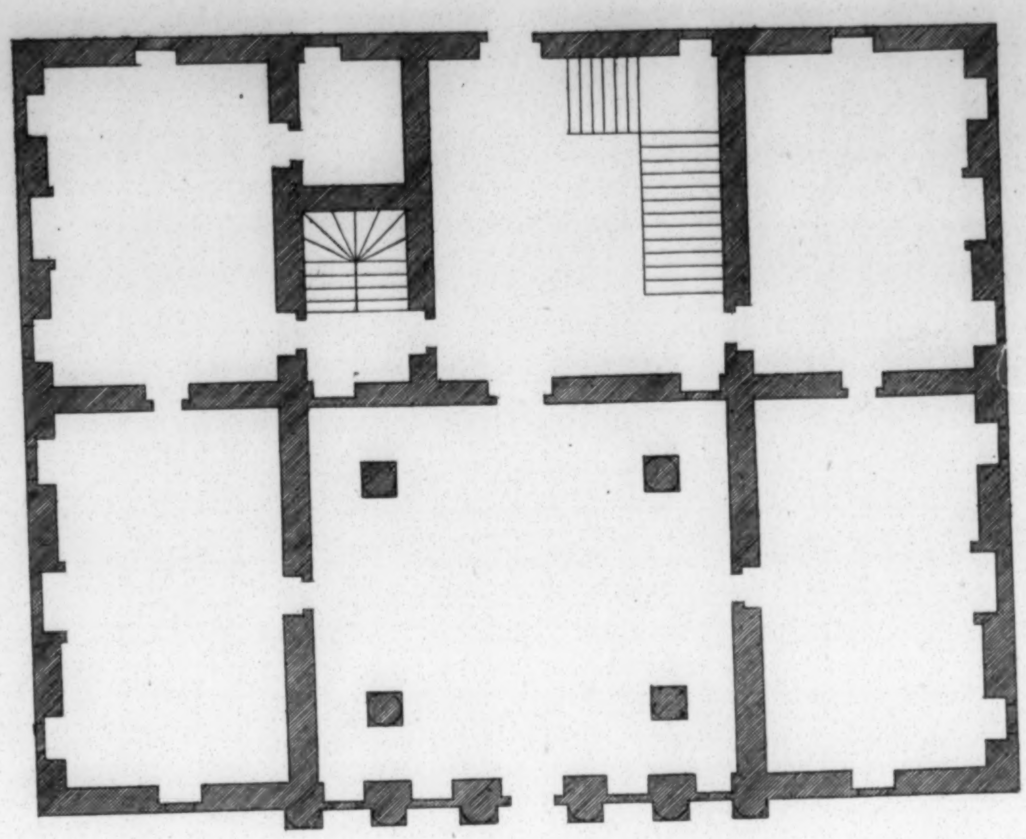

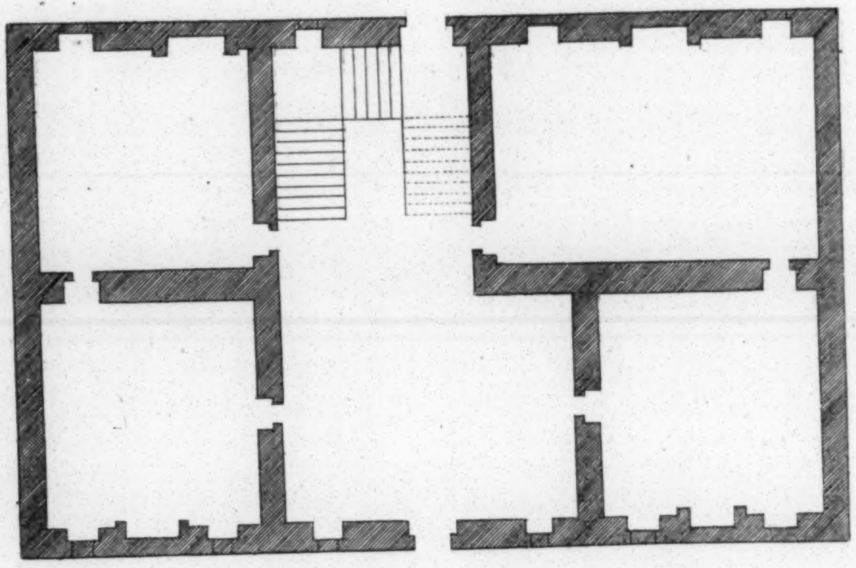

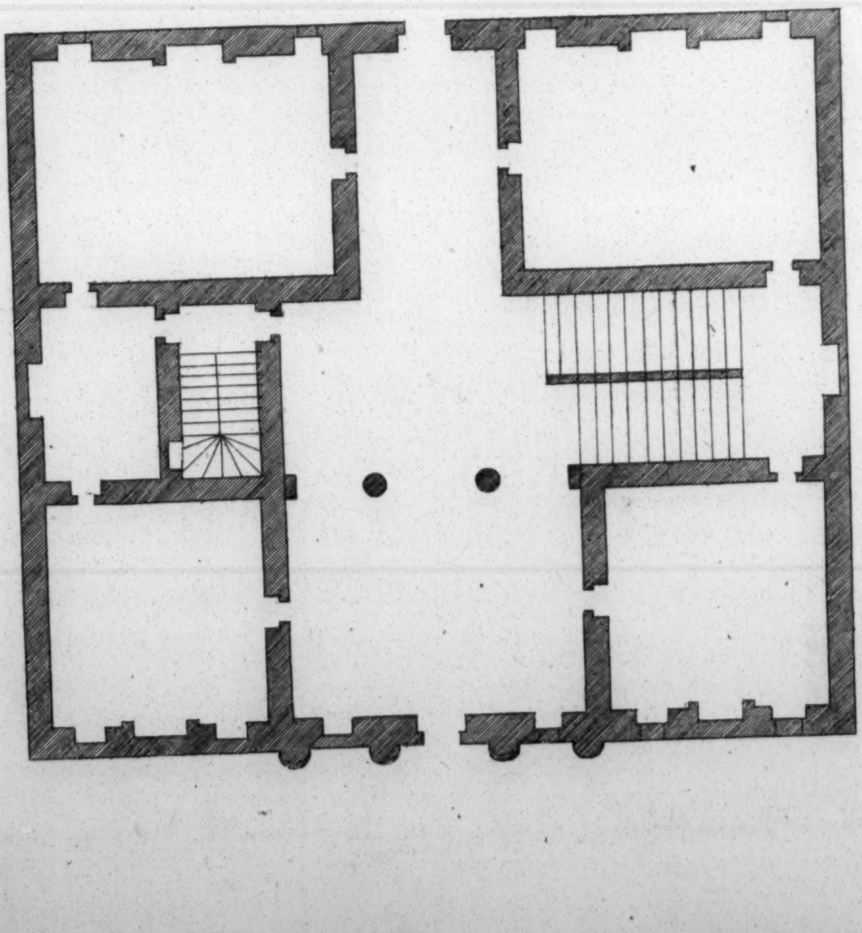

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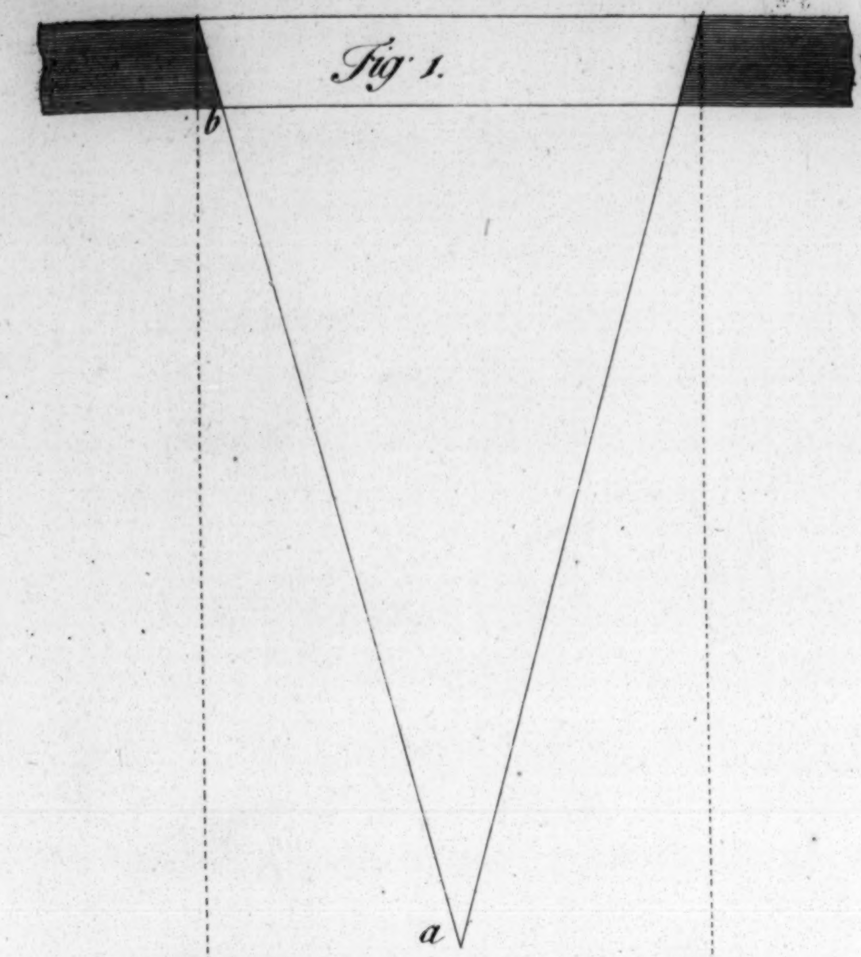
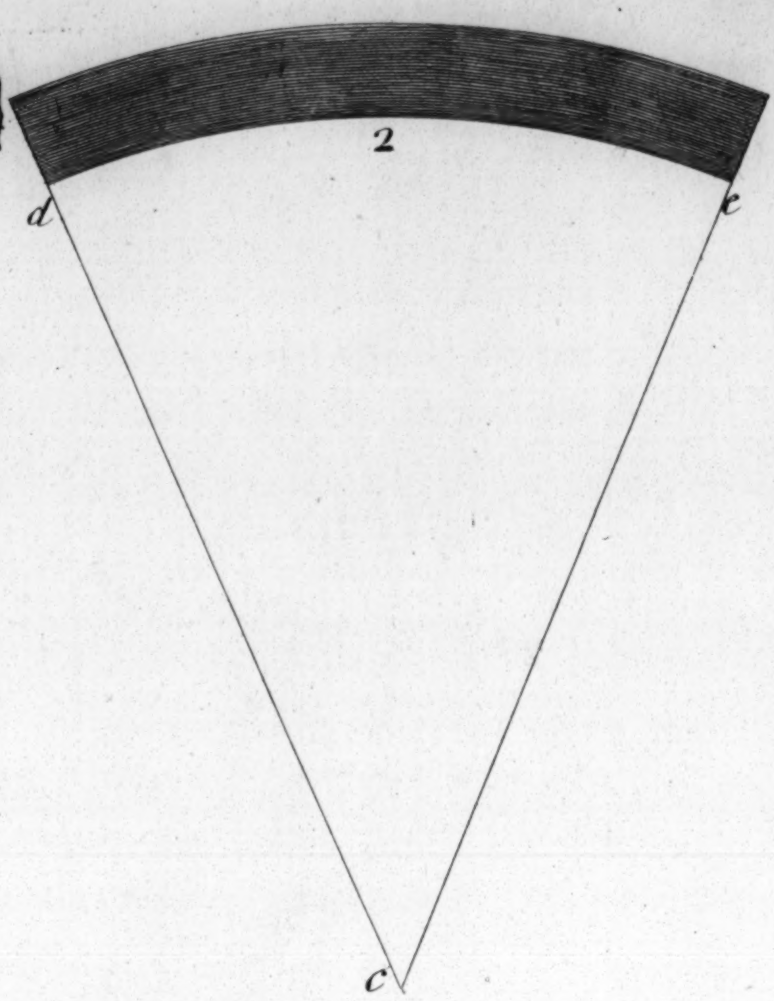
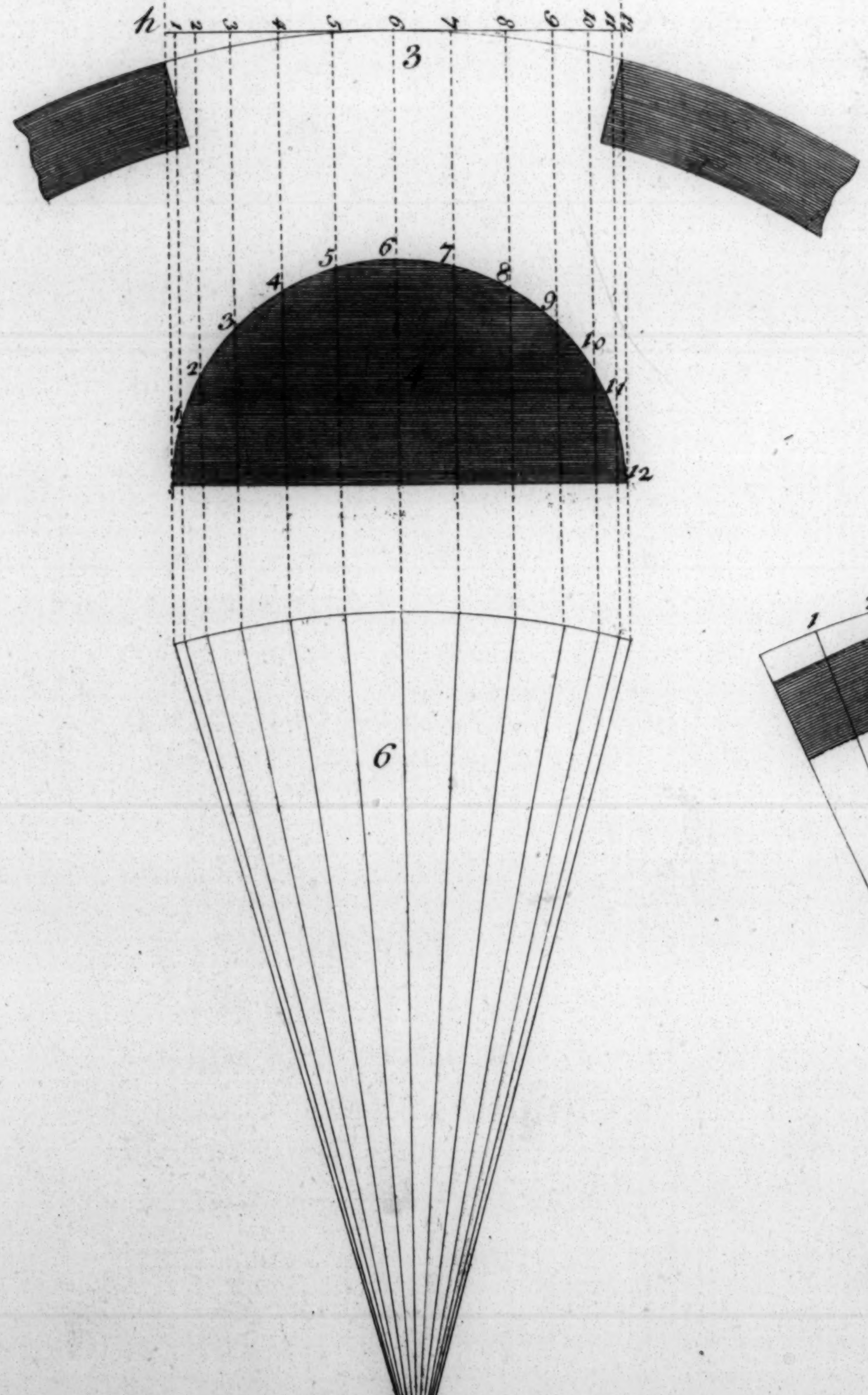
Plate XLII.



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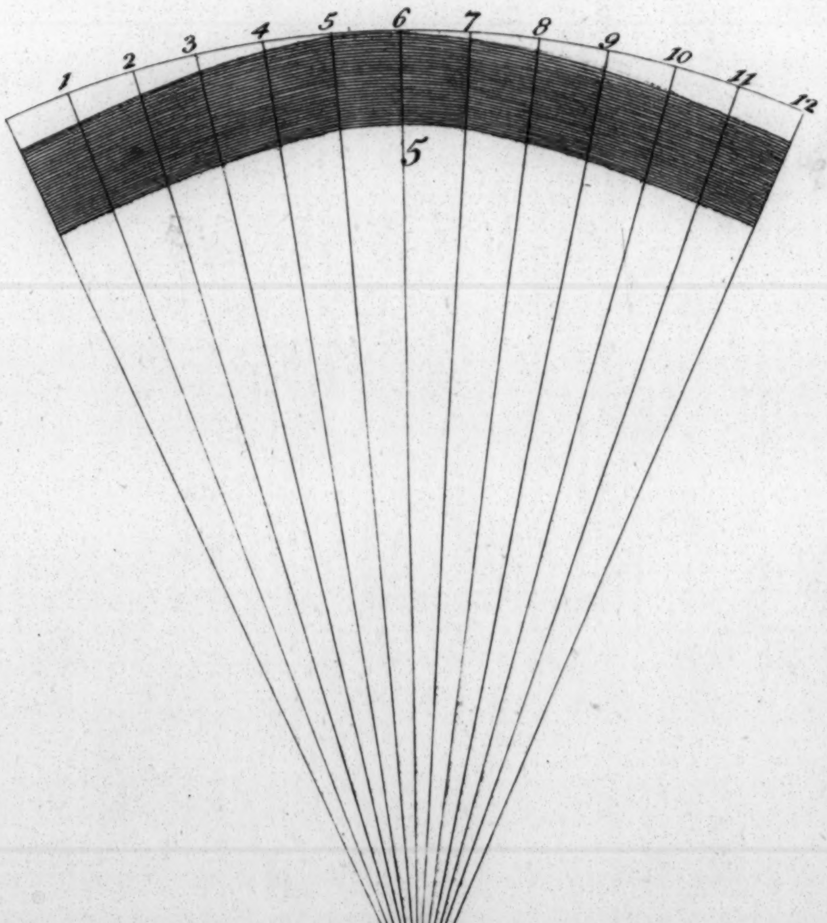
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r Repreſents the Depth of the *Rail*, touching the *Noſe* of each *Step.* You are to take a ſufficient Number of Thickneſſes of this Width, to make the Thickneſs of your *Rail*; glue them altogether upon your *Cylinder* or *Templet*, confine them till they are dry, then the *Rail* taken off is ready ſquared. Proceed in the ſame Manner with the *Architrave* marked *a*.

A Dog-Leg Stair-Caſe.

PLATE XXXVIII. The *Rail* and *Ballusters* of the ſecond Flight are removed out of their proper Place, in order to ſhew the Manner of their finiſhing to the next Story. At the End of the *Winders* is a *Sky-Light*, with what is generally called a *Bridge-Flight.*

To make a *Pitch-board*, to frame for the *Winders.*——Divide the whole Width into as many Parts, as you have *Steps* to come againſt it, which in this Deſign are four, allowing the ſame Height as to the other *Steps*; this Height will be ſufficient for the whole, though it cannot anſwer to every *Step*, ſince they are of different Lengths.

PLATE XXXIX. Repreſents twelve different Sorts of *Brackets*, at large.

PLATE XL. Shews eleven different Sorts of *Balluſters*, at large.

PLATE XLI. Exhibits three Plans of Houſes; wherein the moſt convenient Situation of the Stair-Caſes is ſhewed.

The Situation of the Chimneys is indeed different from what is commonly practiſed in *England*; but is taken from *Palladio*, who ſeldom failed placing his Chimneys betwixt the Windows, that Perſons might at once enjoy the Benefit of the Fire, and the Proſpect.

A circular ſplay'd Soffite, for Doors and Windows.

PLATE XLII. FIG. I. Shews the Opening of a Window in a ſtraight Wall: Draw the Lines ranging with the *Splay* of the *Jambs*, where theſe meet, as at *a*, is the Length of the Radius, for drawing the Curvature of the *Soffite*; then take the Diſtance *a b*, transfer it from *c* to *d*, in FIG. II. then ſet your Compaſſes in *c*, and draw the circular Line *e d*; then ſet on the Width of your *Soffite*, and draw the external Line;

Line; this, when bent to a Semi-Circle, will range along with each Part of the ſtraight Wall.

FIG. III. Repreſents the Opening of a Window, of the ſame Width as the former, in a circular Wall.

FIG. IV. Shews the open Part of the Arch.

The *Arch-Line* may be divided into any Number of Parts, as here into Twelve. Draw Lines perpendicular from the *Baſe-Line* through all theſe Diviſions to the Line *h*; then in FIG. V. draw a circular Line, as if for a ſtraight Wall, and divide it in the ſame Number of Parts, as the *Arch-Line* in FIG. IV. then take off the Diſtances from the Line *h*, to the circular Wall, and ſet them from the outſide Line in FIG. V. as at 1, 2, 3, *&c.* to 12. Then you will have the true Curvature of your *Soffite*, which when bent to a Semi-Circle, will in every Part agree with a circular Wall.

FIG. VI. Shews a Cone, cut off by the Wall-Line.

A Cornice for a Chimney.

PLATE XLIII. To proportion this Cornice,—— Let the *Architrave* be divided into three equal Parts; divide one of them into ten, and diſpoſe them to the Height and Projection of each *Moulding*, as is ſhewn in the Plate.

I have made theſe Diviſions by a *Diagonal Scale*, becauſe I take that to be the readieſt Way, once ſetting the Compaſſes being ſufficient.

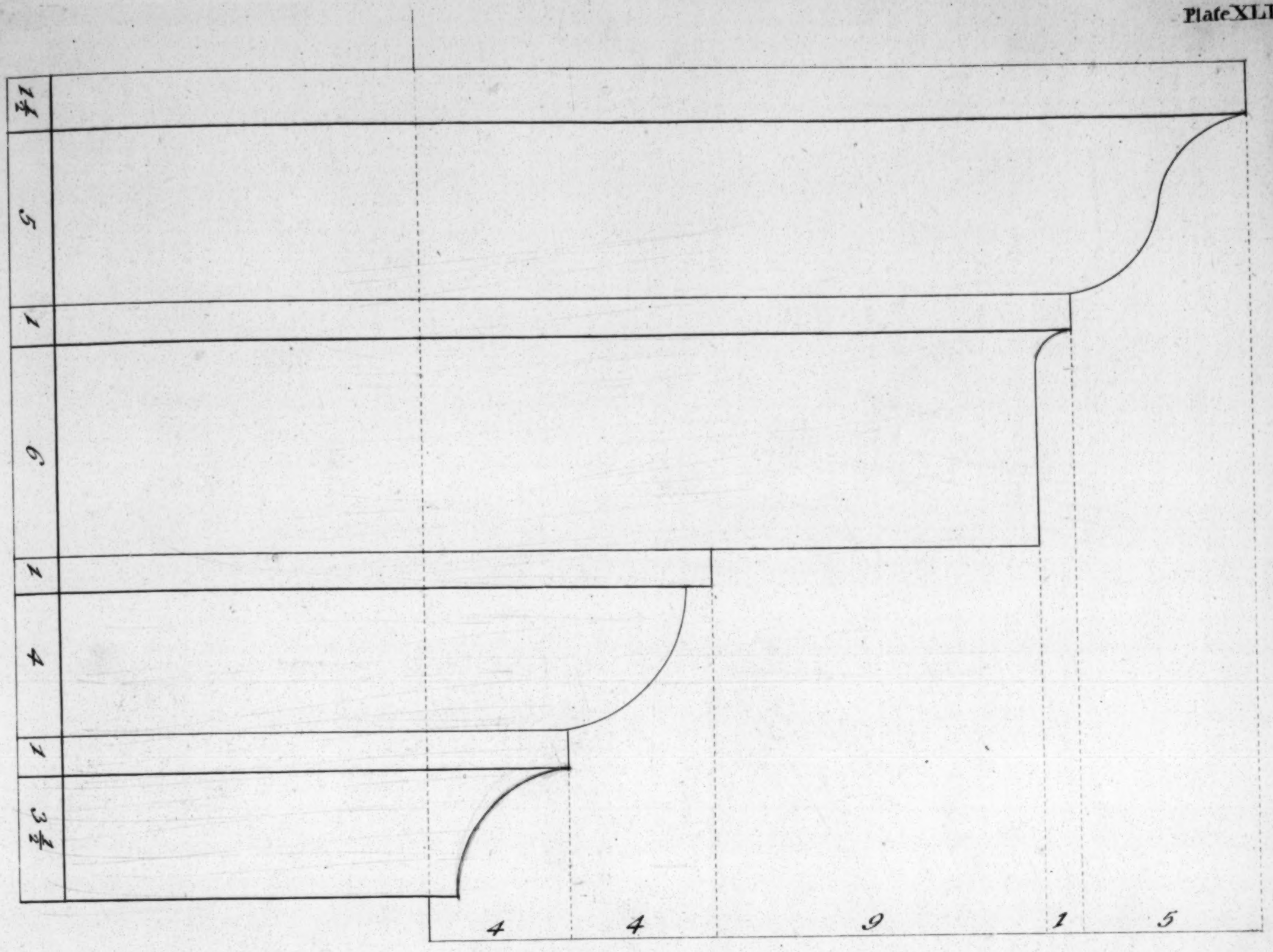
The *Architrave* is one ſixth Part of the Opening, as uſual.

A different Cornice and Architrave.

PLATE XLIV. The *Architrave* here is divided as in the former; the Meaſures are to be diſpoſed as in the Plate.

A different Cornice and Architrave.

PLATE XLV. The *Architrave* here is divided into four Parts, and one of them into eight; diſpoſe of them, as in the Plate, to each particular Part.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5
1
6
1
4
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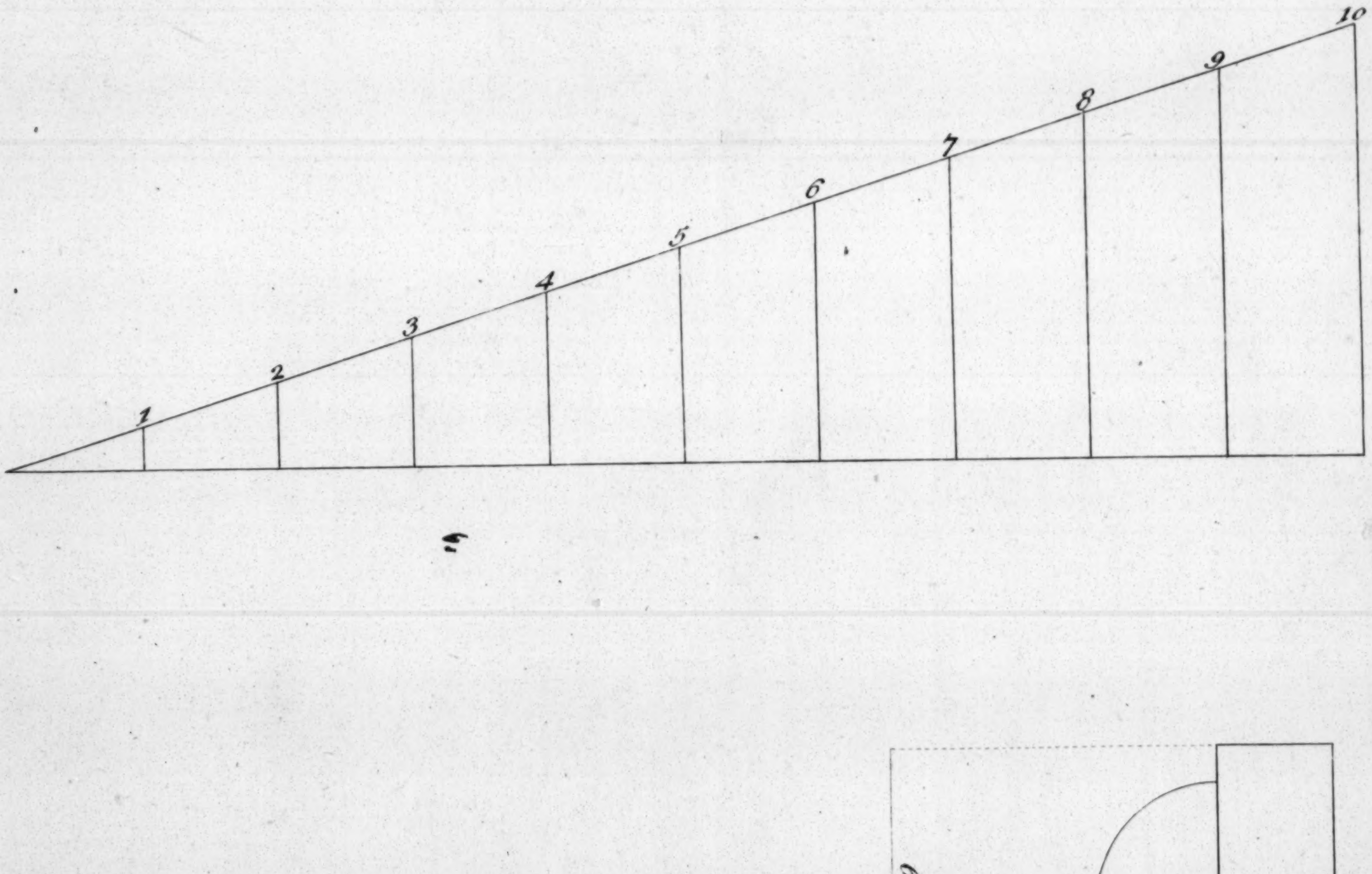
4
4
9
1
5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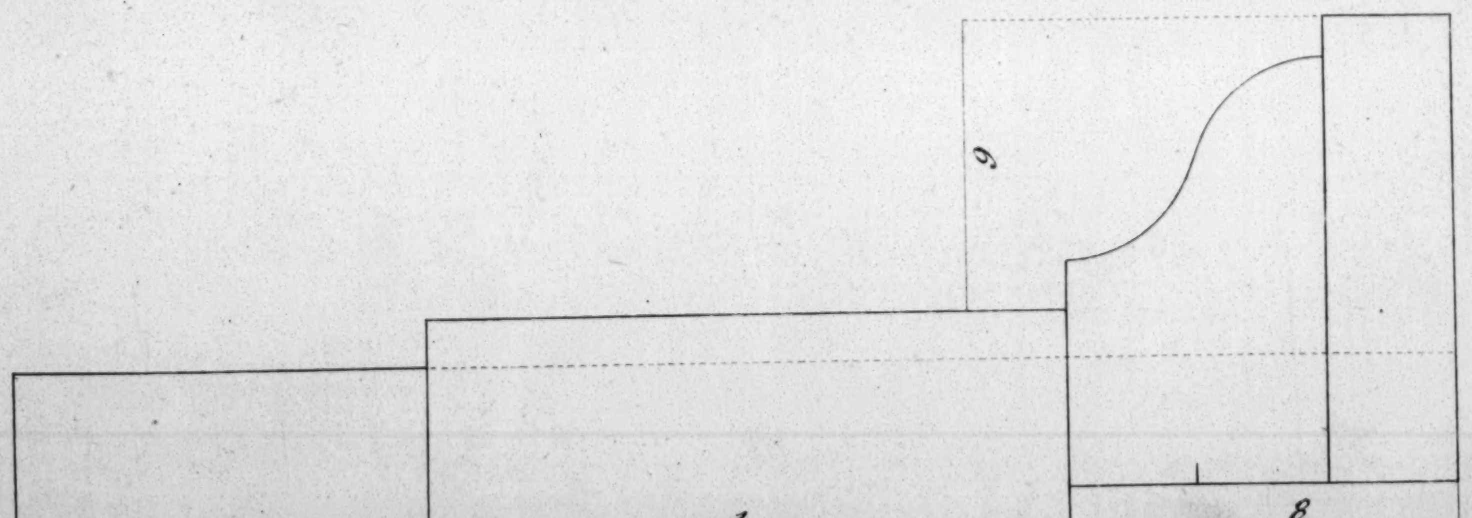
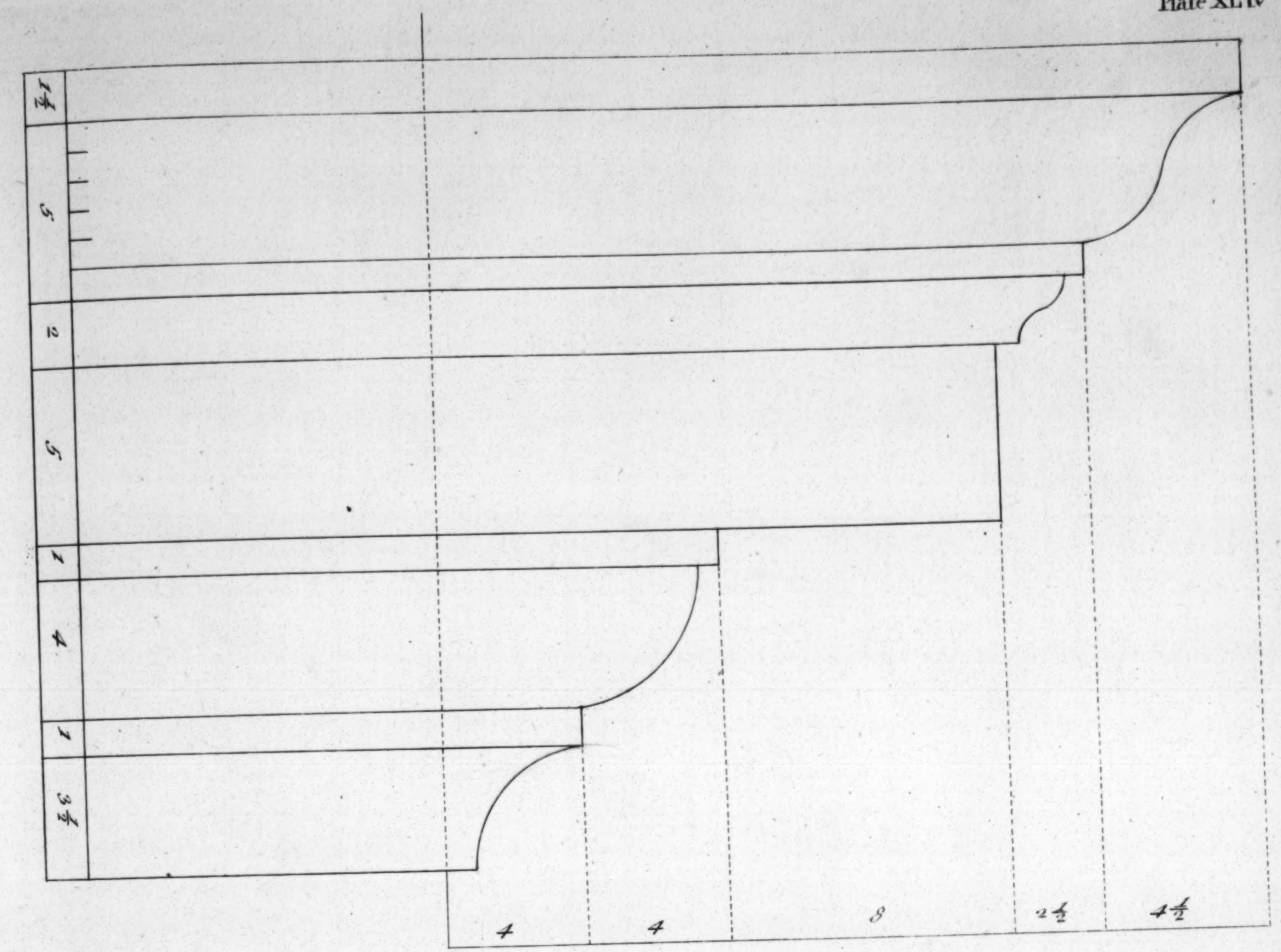
3
4
5
6
7
8
9
10


9
8½
13½
8
1
2
3

Ab Swan in et de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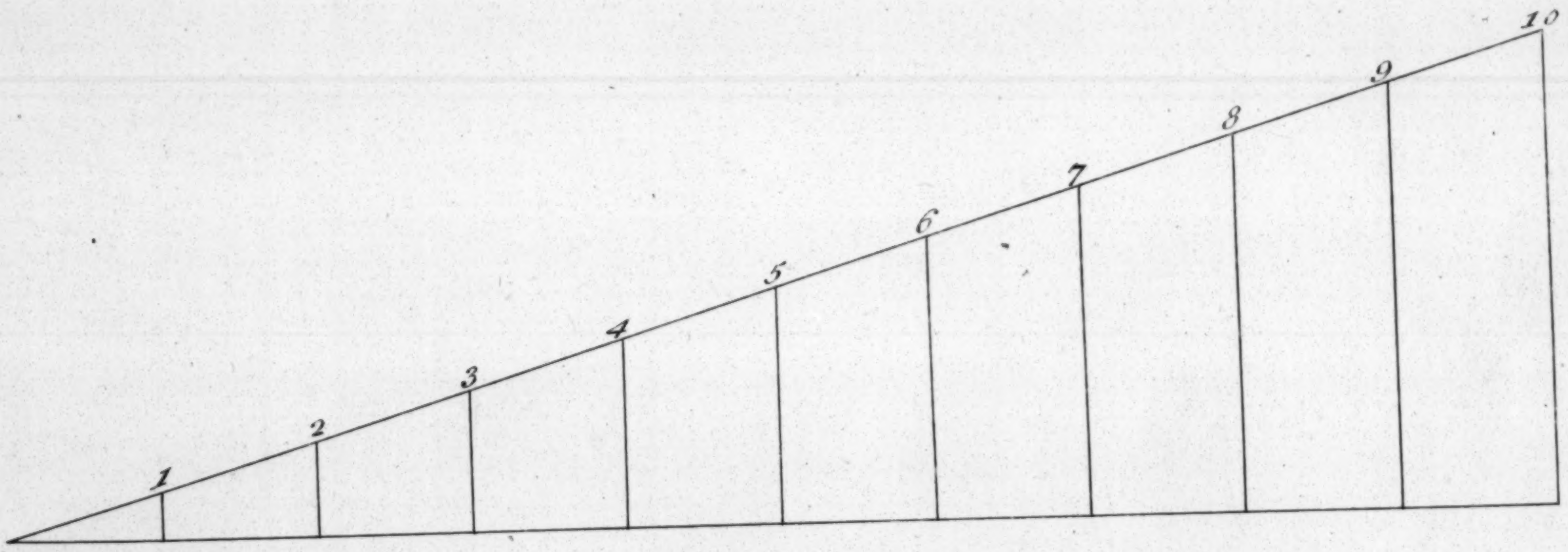
2
5
1
4
1
3½
4
4
8
2½
4½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3
4
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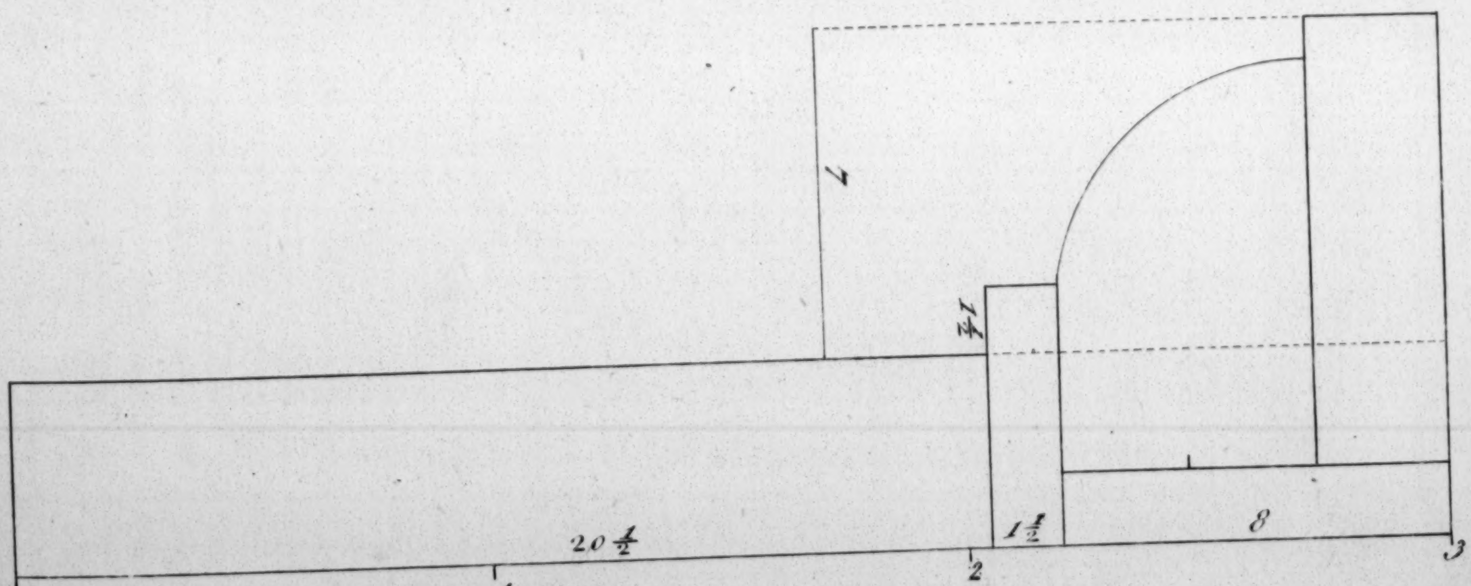
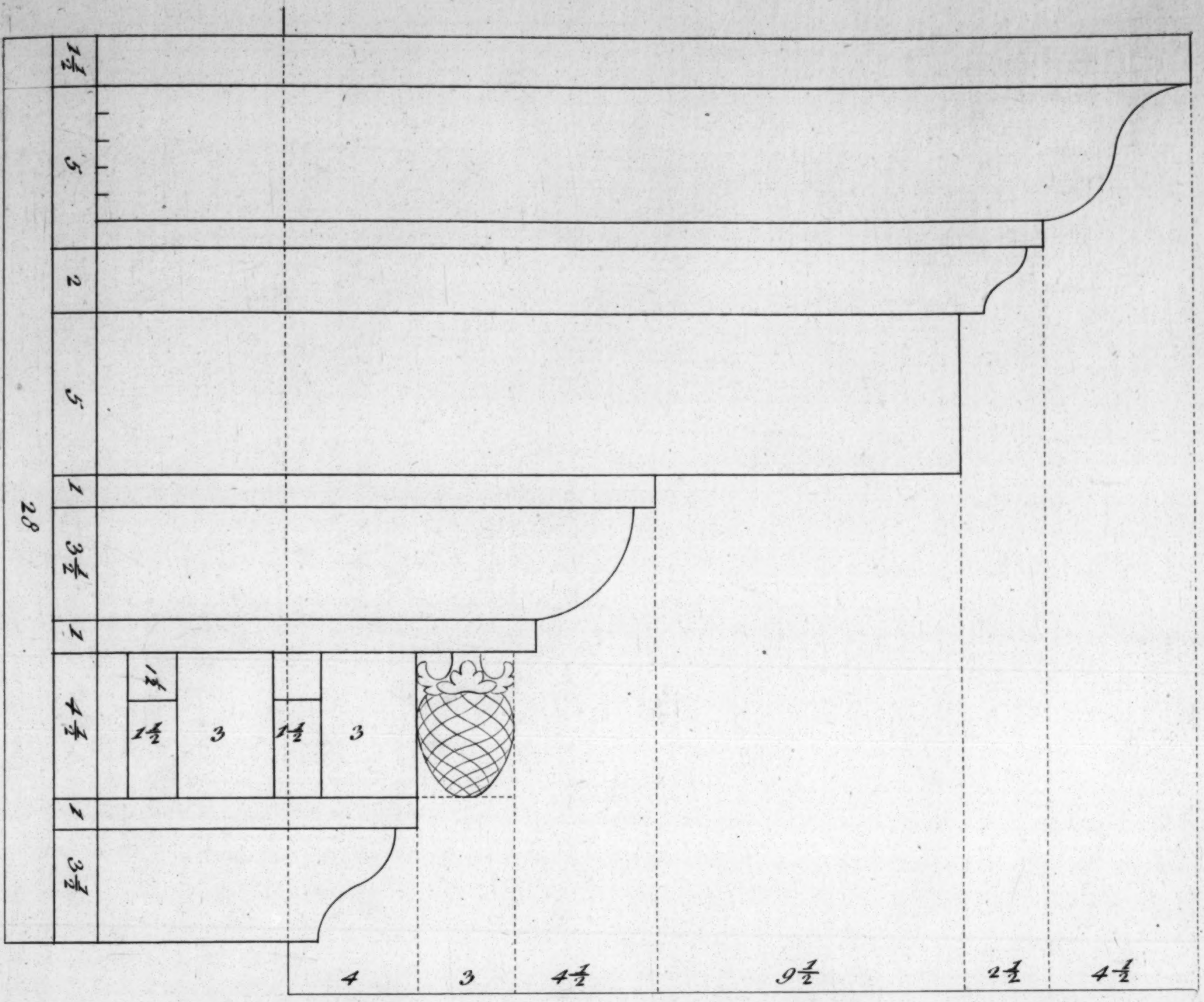
6
7
8
9
10


7
1½
20½
1½
8
1
2
3

Ab Swan in et de

Plate XLV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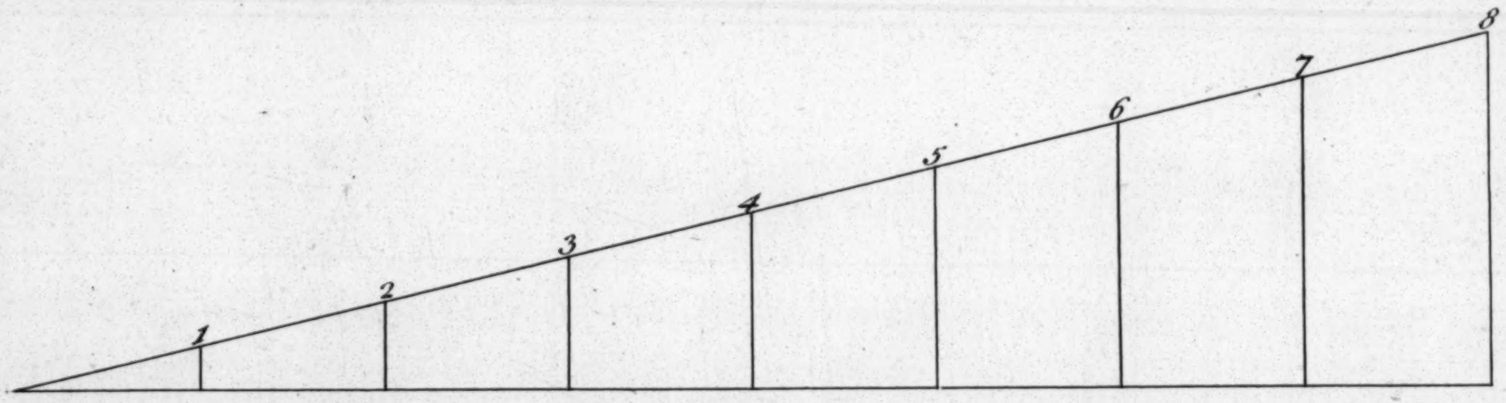
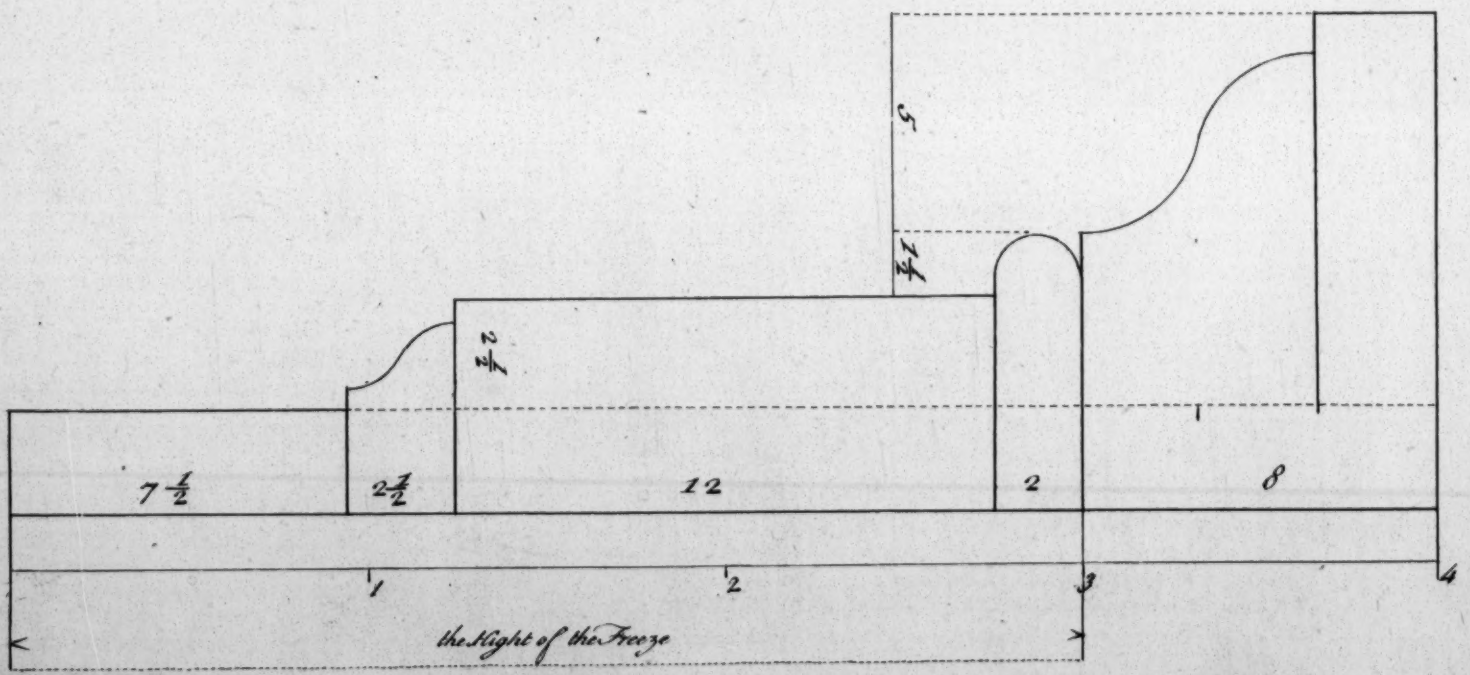
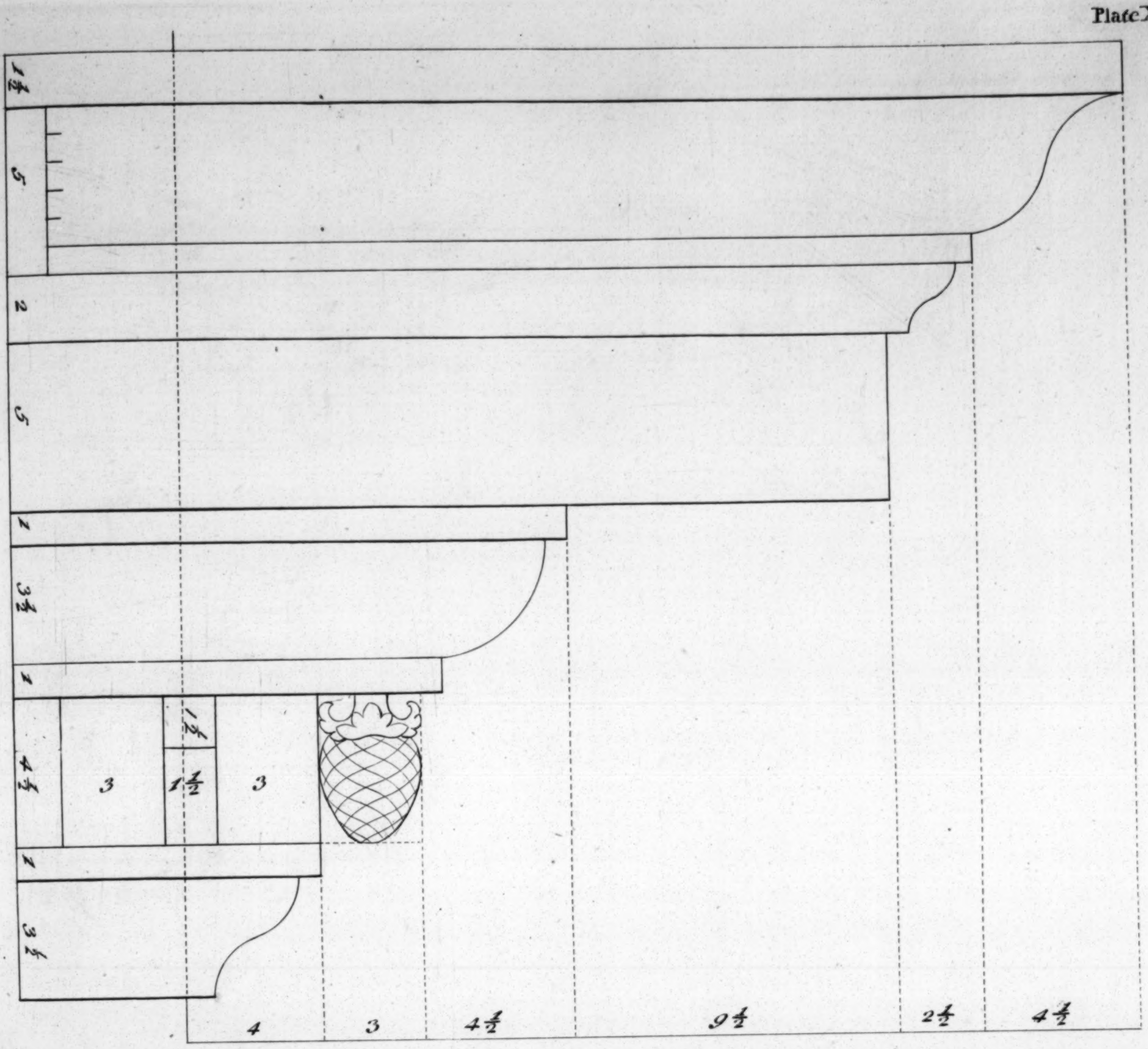
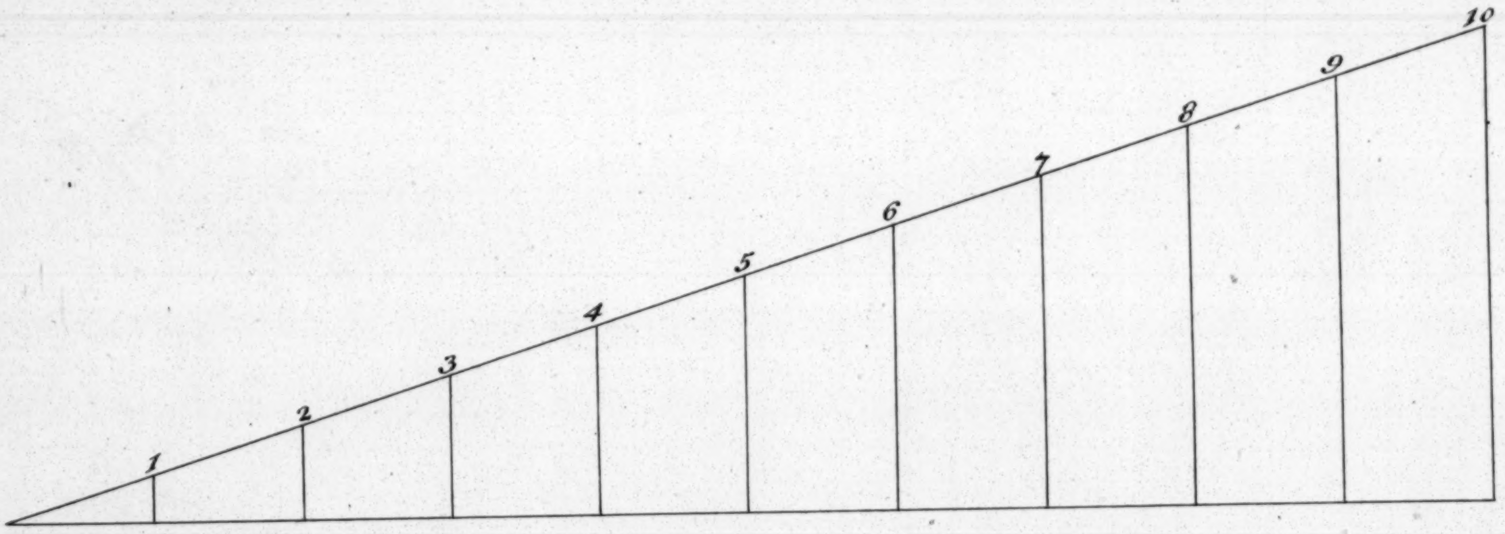
2
5
1
3½
1
4½
1
3½
28
1½
1½
3
1½
3
4
3
4½
9½
2½
4½




5
1½
2½
7½
2½
12
2
8
1
2
3
4
the Hight of the Freeze

Ab Swan in et de


1½
5
2
5
1
3½
1
4½
1
3½
1½
3
1½
3
4
3
4½
9½
2½
4½


1
2
3
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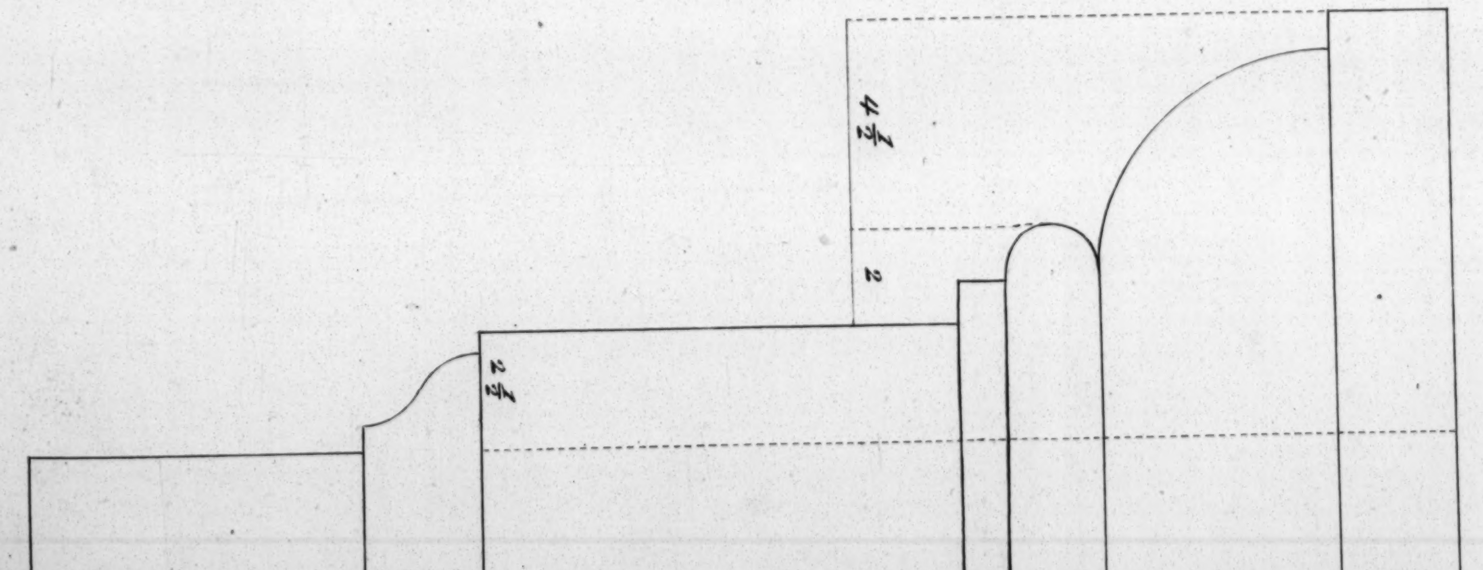
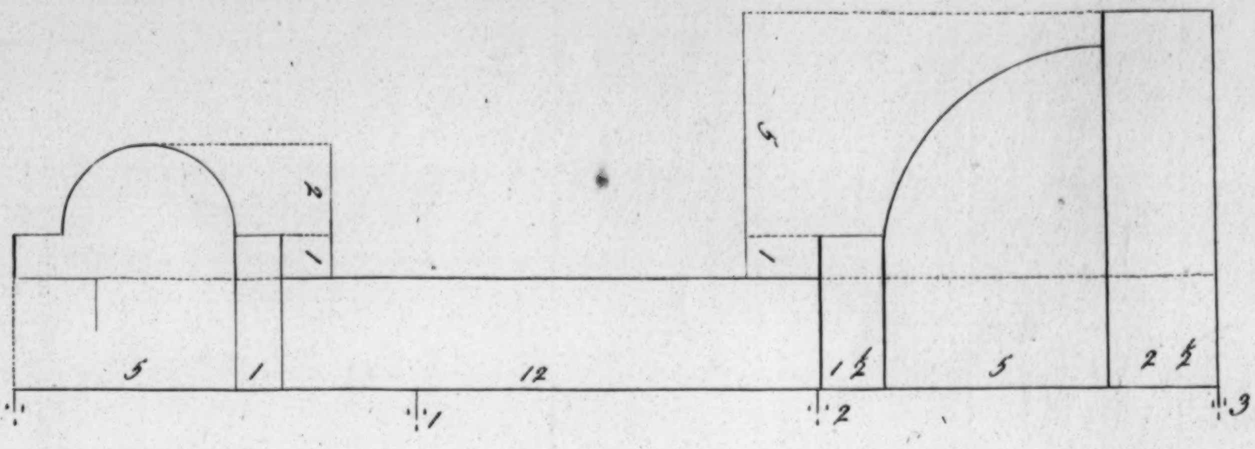
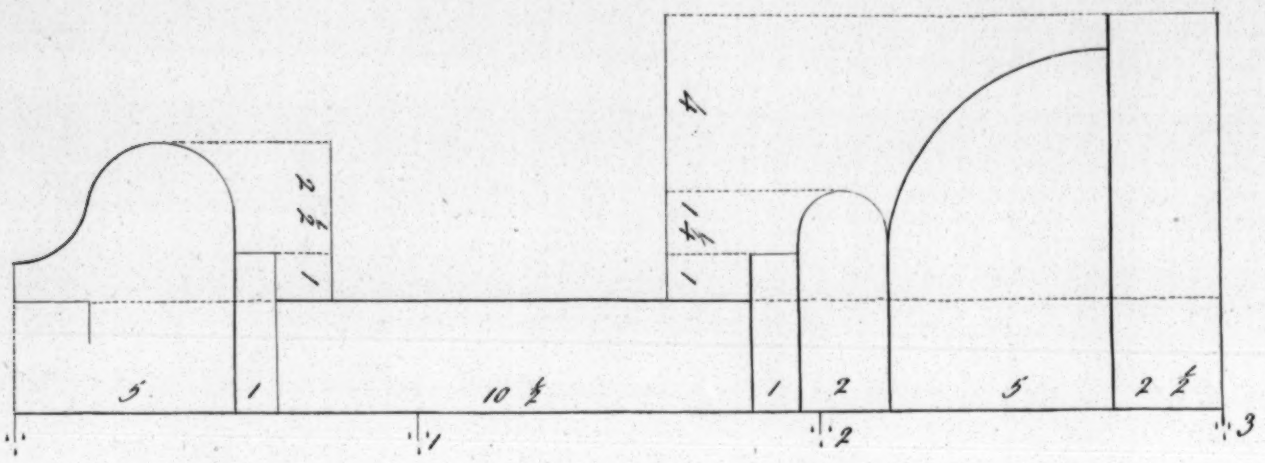
6
7
8
9
10

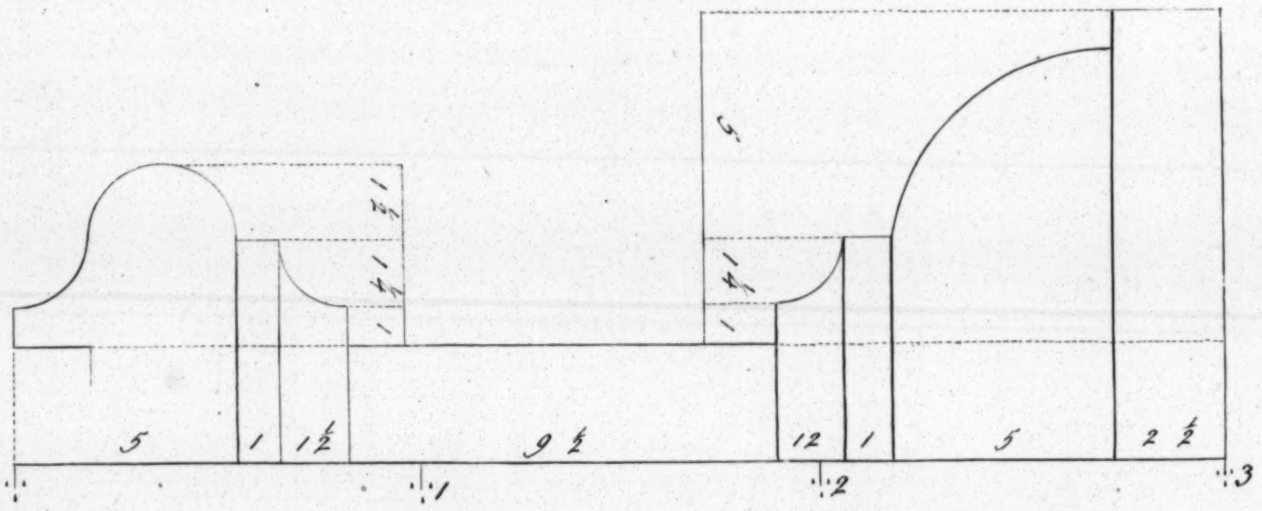

4½
2
2½
7
2½
10
1
2
5
2½
1
2
3

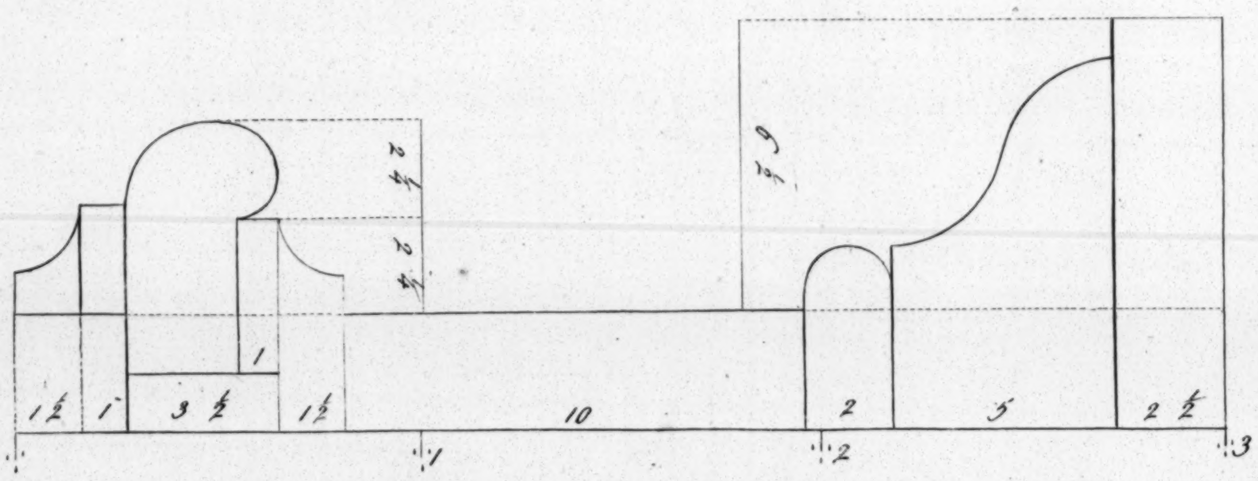
Ab Swan in et de.

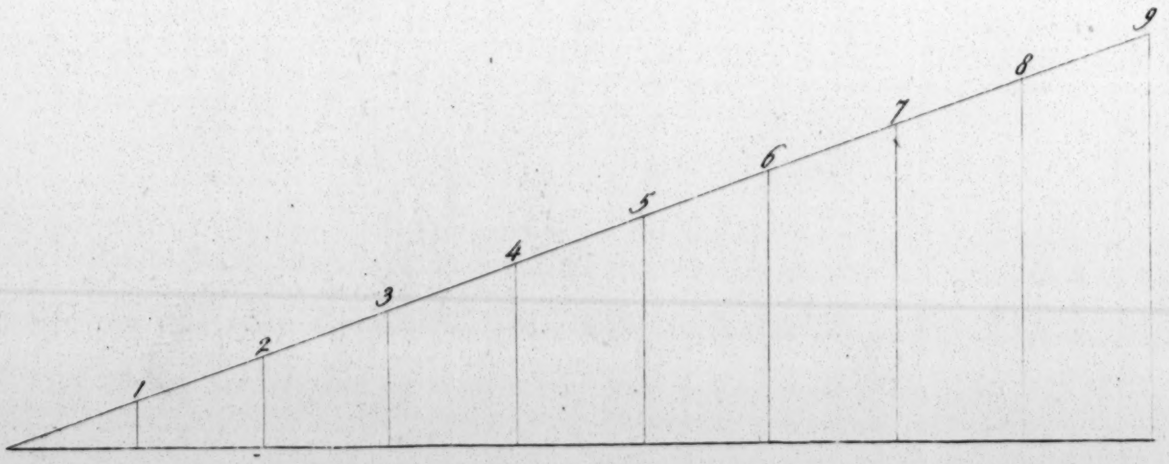
Plate XLVII


2
1
5
1
5
1
12
1 1/2
5
2 1/2
1
2
3


2 1/4
1
4
1 1/4
1
5
1
10 1/2
1
2
5
2 1/2
1
2
3


1 1/2
1 1/4
1
5
1 1/4
1
5
1
1 1/2
9 1/2
12
1
5
2 1/2
1
2
3

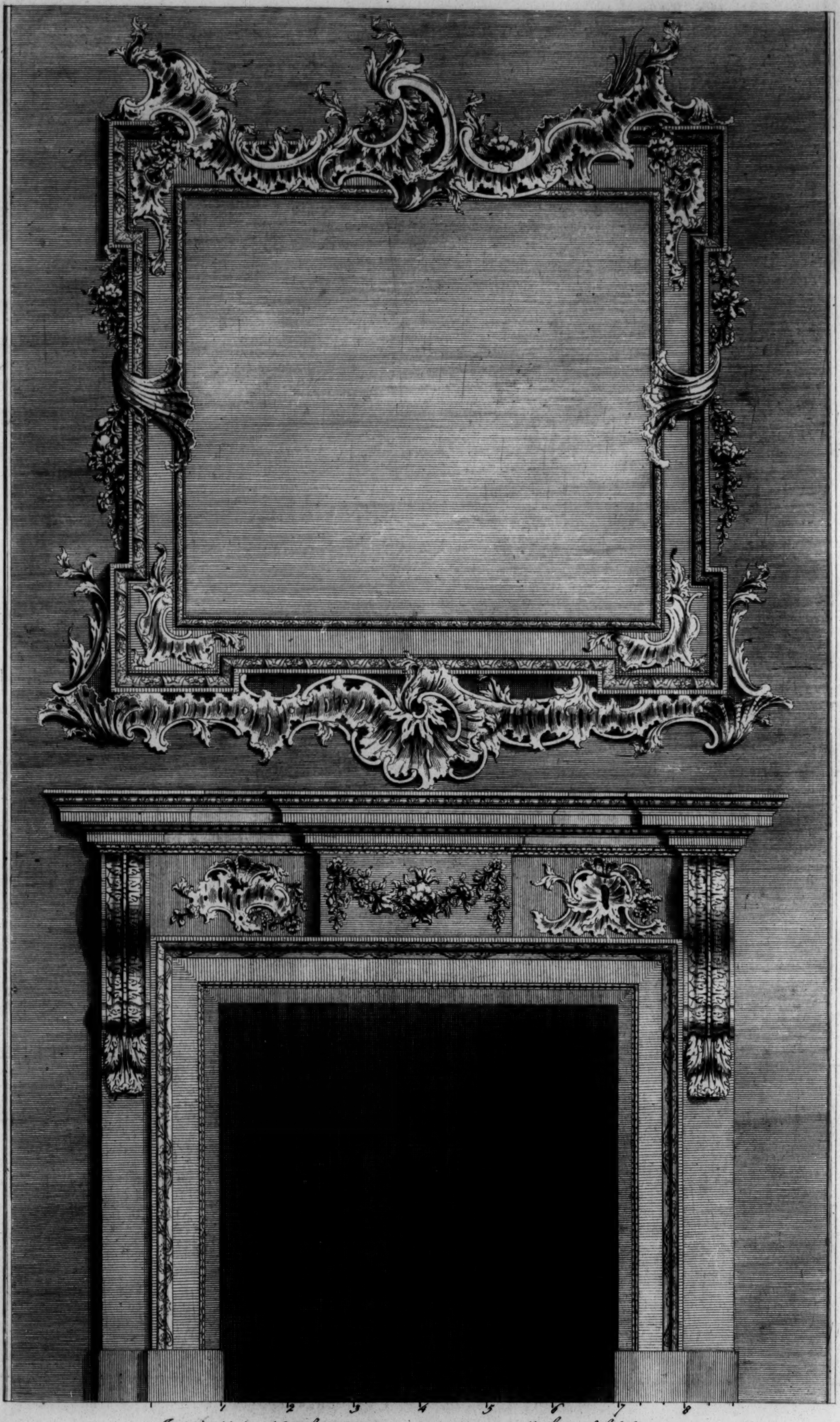

2 1/4
2 1/4
6 1/2
1
1 1/2
1
3 1/2
1 1/2
10
2
5
2 1/2
1
2
3



Ab. Swan in et de

Rooker sc.

Plate XLVIII



It Would be Needleſs to Lay down all the Particular Meaſures of theſe Chimneys,
They being Better Discrib.d at large on the five fore-going Plates.

A Swan int. et delin.

E. Rooker ſc.

Publish.d According to Act of Parliament Jan.ry ye 26th 1743/4

A Cornice in the ſame Form, but larger in Proportion than the ſoregoing.

PLATE XLVI. The *Architrave* is here divided into three Parts, and one of them into ten; diſpoſe the Meaſures as in the *Deſign*.

Several different Mouldings for Frames.

PLATE XLVII. There are three different Rules for proportioning theſe *Mouldings*;——One is to divide the whole Width of the *Frame* into ſeven equal Parts, and take one for the *Moulding*; the next is to divide it into fifteen, and take two for the *Moulding*; and the laſt is to divide it into eight equal Parts, one of which is given to the *Moulding*. Having thus found the Width, you may divide it into three equal Parts, and one of them into nine; then diſpoſe theſe Parts to the Height and Projection of each *Moulding*, as is ſhewn in the Plate.

A Chimney-Piece, with a Frame over it, for a Picture or Pannel.

PLATE XLVIII. The Opening of this *Chimney* is a perfect Square, which is certainly a very good Proportion, except when they run to a great Extent; then the Width of the *Chimney* may be divided into thirteen Parts, twelve of which may be the Height; or into ſeven Parts, and take ſix for the Height; or into fifteen, and aſſign thirteen for the Height.

Whichſoever Proportion you follow, it makes no Alteration in the Ornaments. The *Architrave* is one ſixth, as uſual; the Width of the *Architrave*, and one third Part more, gives the Height of the *Freeze*.

Over this *Chimney-Piece* is a very rich *Frame*, for a *Picture* or *Pannel*. To proportion which,——Divide the Width within into eight Parts, ſeven of theſe Parts will be the Height within, and one of them is the Width of the *Moulding*; as was ſhewn at large in the foregoing Plate. The *Knees* at the Corners are to be made of different Lengths, according to the Ornaments which are intended to be put in.

Another

Another Chimney-Piece, with a very rich Frame over it.

PLATE XLIX. The *Architrave* of this *Chimney-Piece* is one ſixth Part of the Opening; and the *Truſs* is two Thirds of the *Architrave*.

Over this *Chimney-Piece* is a very rich *Frame*; the Ornament on the Top is repreſented ſomething in the Form of a *Pediment*.

The *Moulding* of the *Frame* may be proportioned as the foregoing.

Another Chimney-Piece, with a very rich Frame over it, adorned with a Pediment.

PLATE. L. The *Architrave* from Outſide to Outſide, is divided into ſeven equal Parts; one of which is the Width of the *Truſs*; and the Height of the *Architrave* is one fifth Part, together with its large *Ovolo*, adorned with Shells and Flowers.

The *Frame* may be proportioned as the former.

The *Knees* at the Corners are here twice the Width of the *Moulding*.

A Deſign for a Chimney-Piece in a lower Story.

PLATE LI. In this Deſign, the Height of the *Freeze* is two Sevenths of the Width of the Opening of the Chimney; and the *Truſſes* up the Side of the *Chimney* are one fifth: The Width of the *Truſſes*, that ſupport the *Cornice*, may be one ſixth of the Opening.

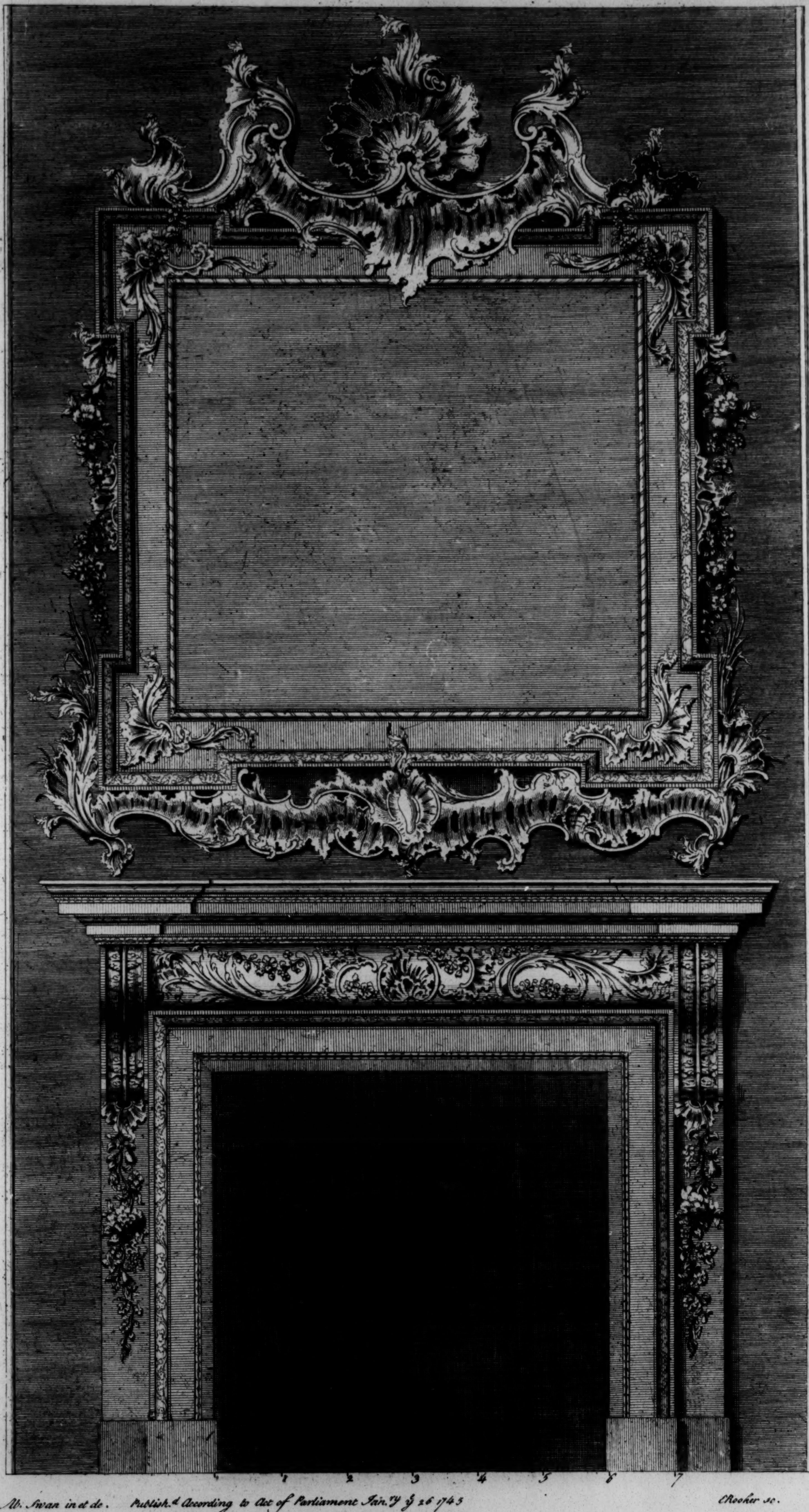
The *Architrave* is between one fifth, and one ſixth Part.

To proportion the *Frame* and its *Truſſes* over this *Chimney*. Divide the Extent from the Outſides of the *Truſſes* in the *Freeze*, into ten equal Parts; one of them ſhall be the Width of the *Truſſes* above; another Part muſt be given to the *Ovolo*, with its *Margin and Ogee*; and ſix Parts muſt be aſſigned for the Width within.

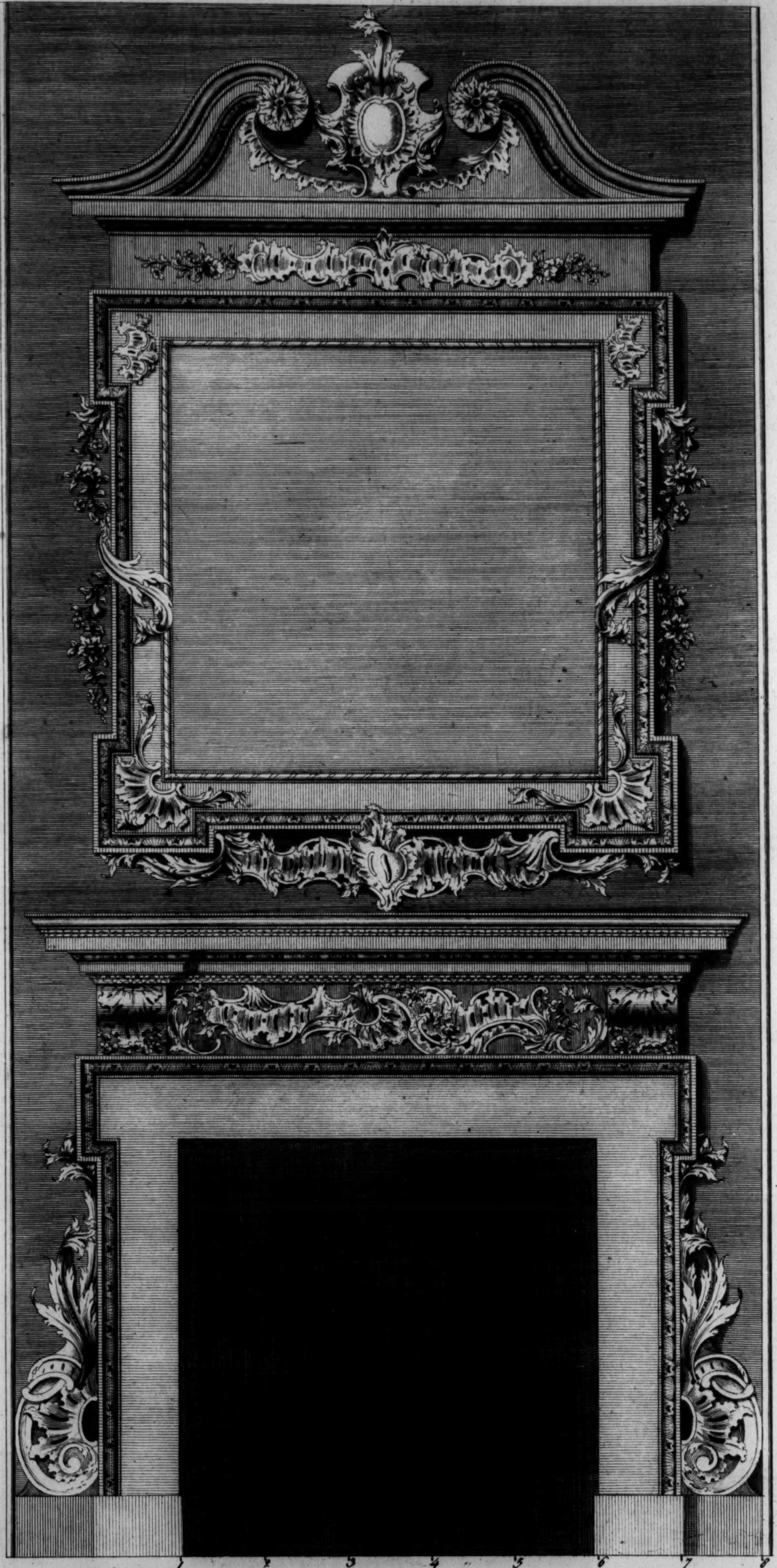
The *Plinth* on which this Frame ſtands, is half one of thoſe Parts.

Another

Plate XLIX

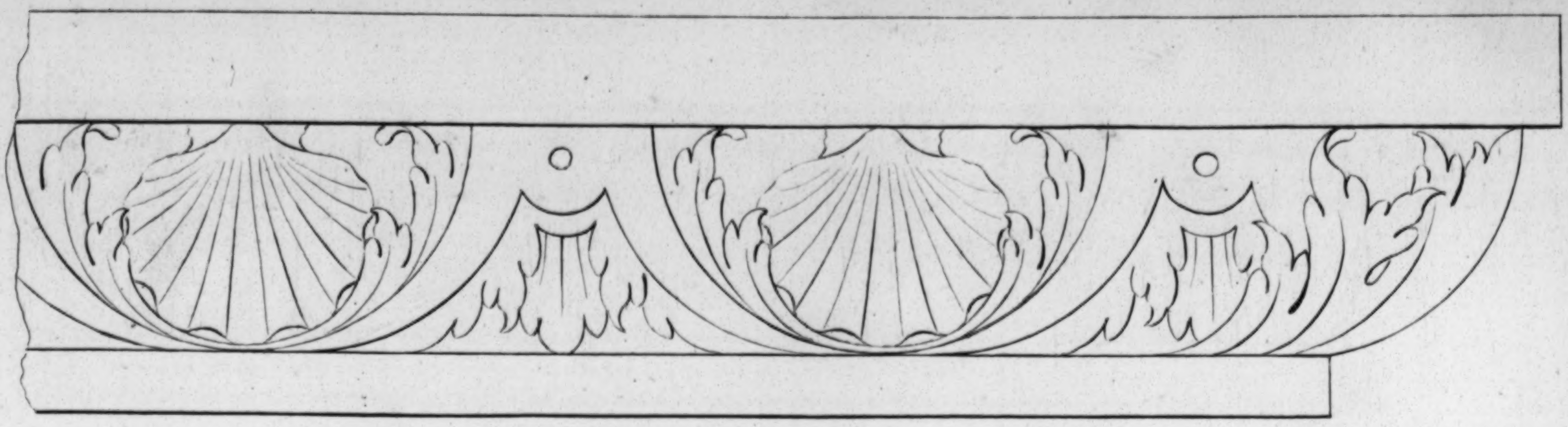


Ab. Swan in et de. *Publish.d According to Act of Parliament Jan.ry ye 26 1745* *C.Rooker sc.*

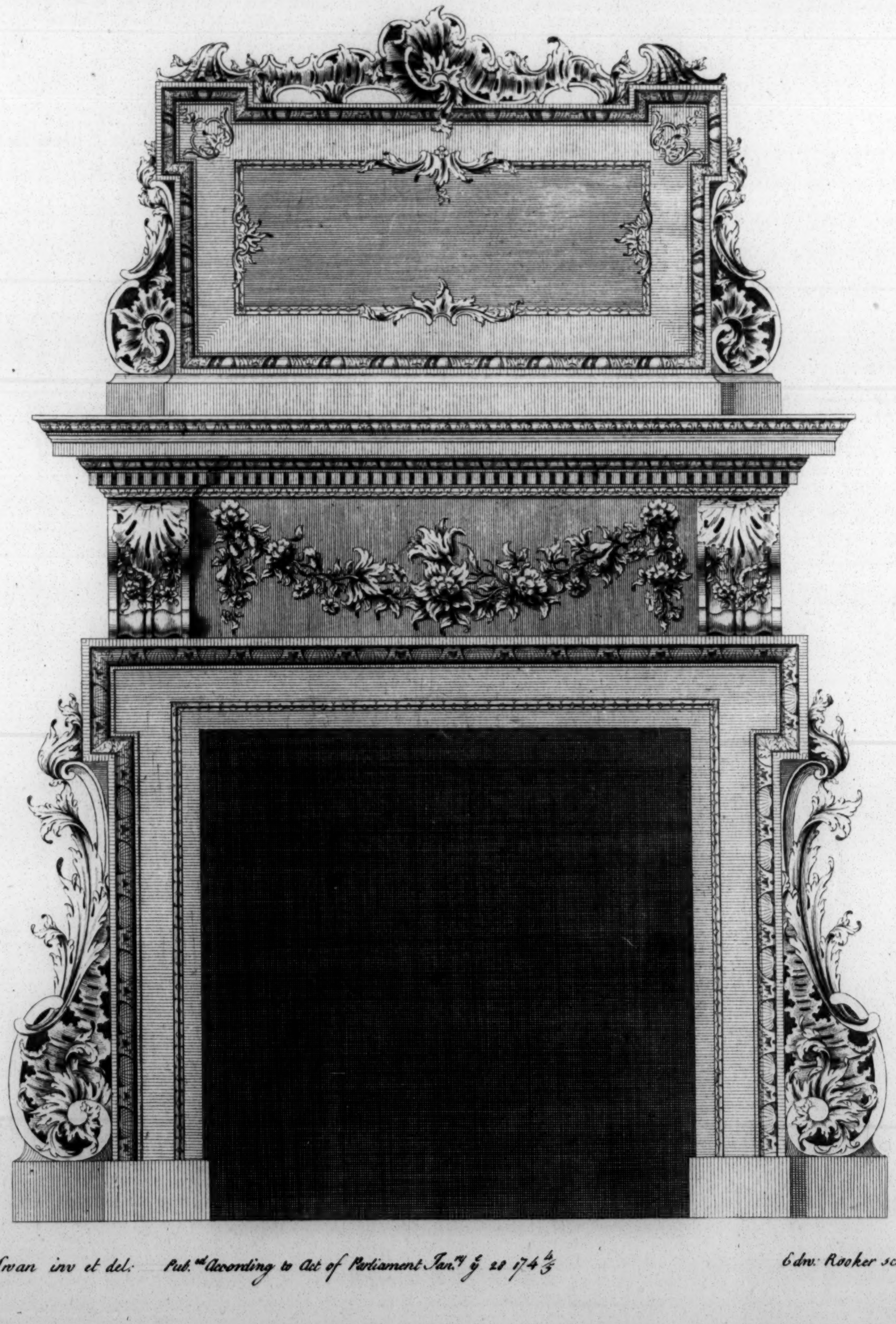


Ab: Swan in et de. Pub:hd According to Act of Parliament Jan: ye 25th 1745 E Rooker sc.

Plate LI

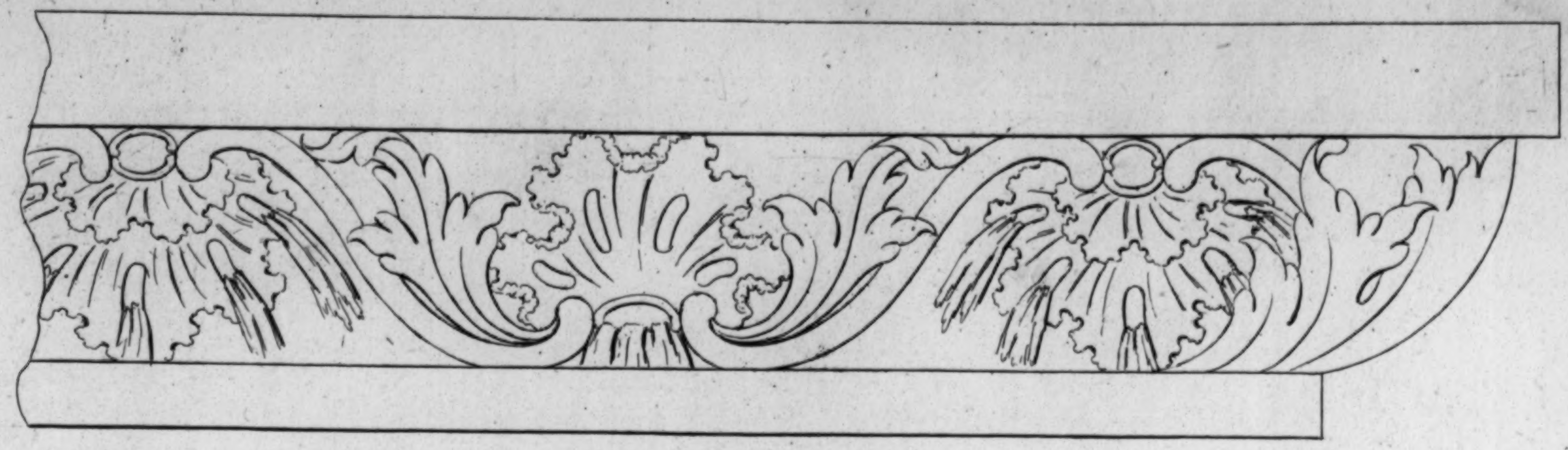


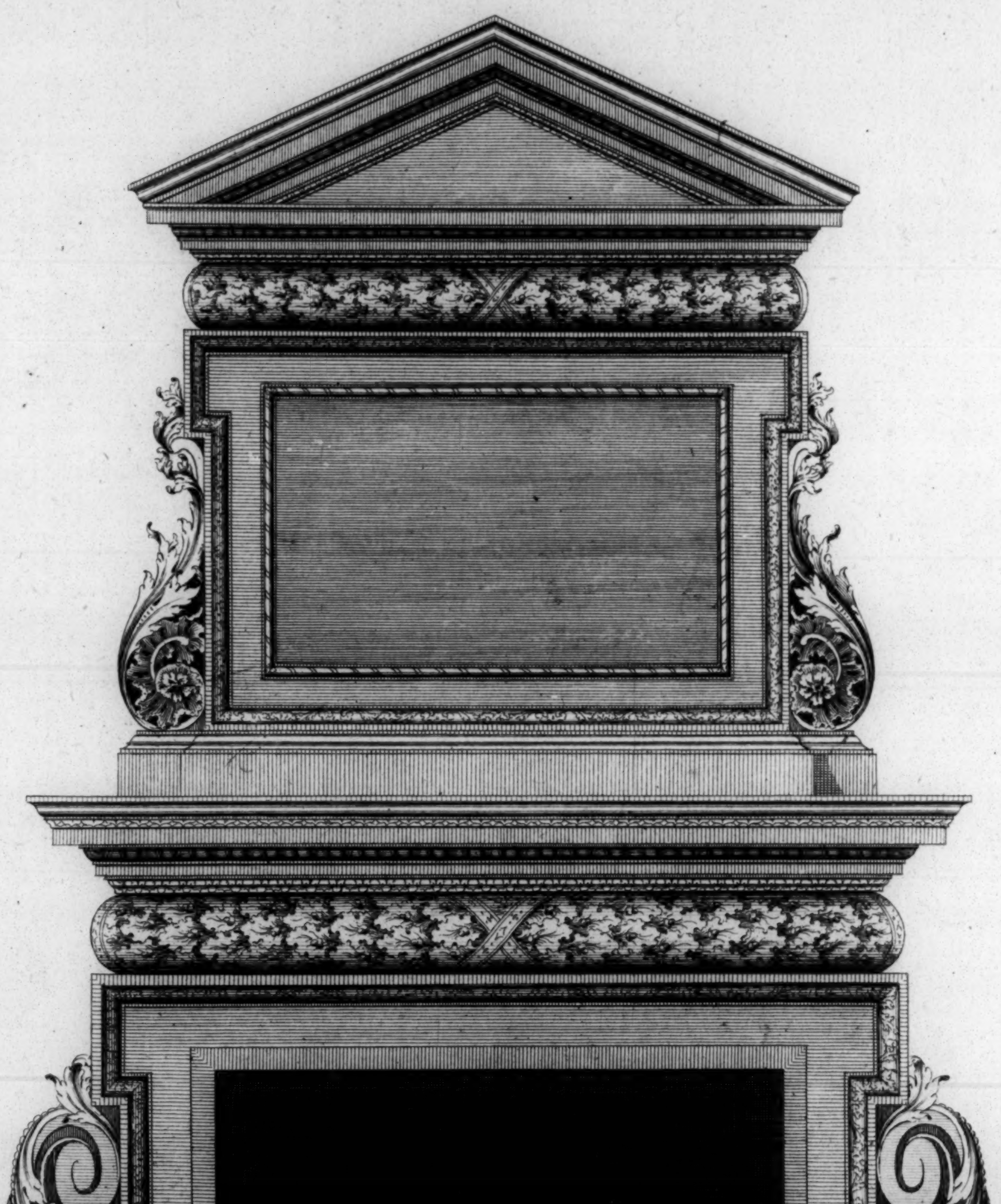
This Plate Shews how any of the fore going Chimneys
May be Shortened if Required.



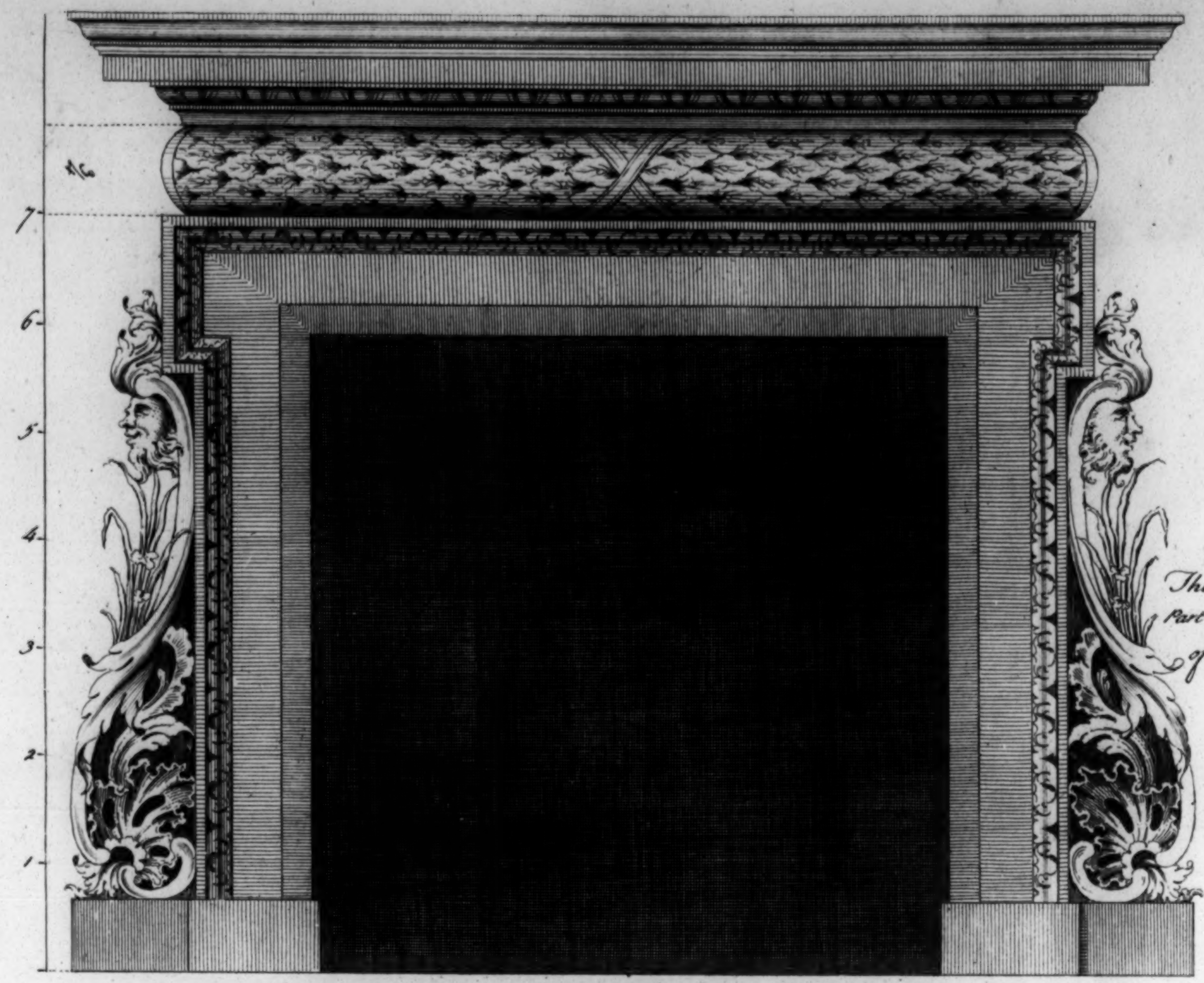
Ab. Swan inv et del: *Pub.d According to Act of Parliament Jan.ry ye 28 174$\frac{4}{5}$* *Edw: Rooker sculp.*

Plate LII

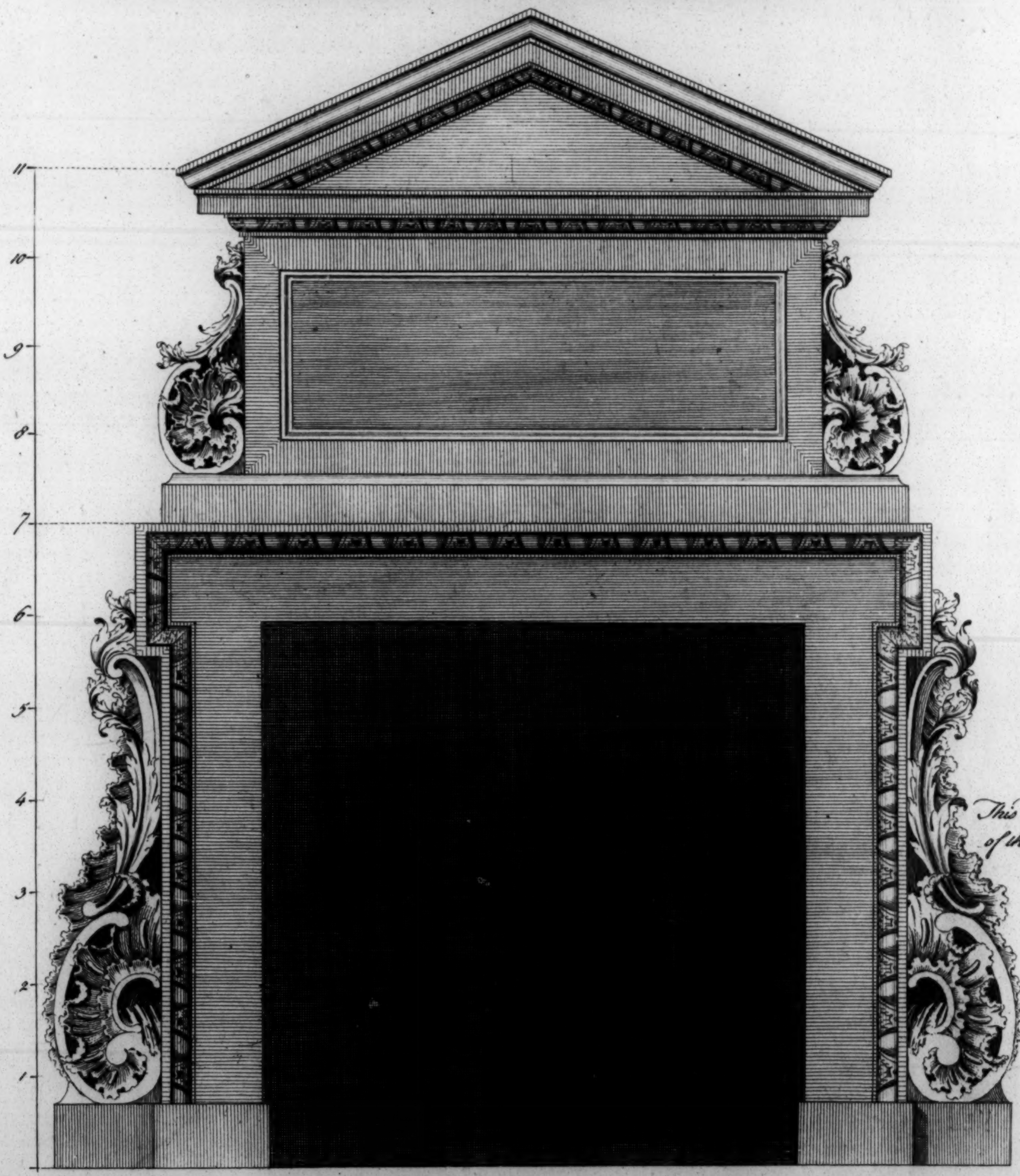




Ab: Swan inv et del. *Pub.d According to Act of Parliament.* *Edw: Rooker sculp.*



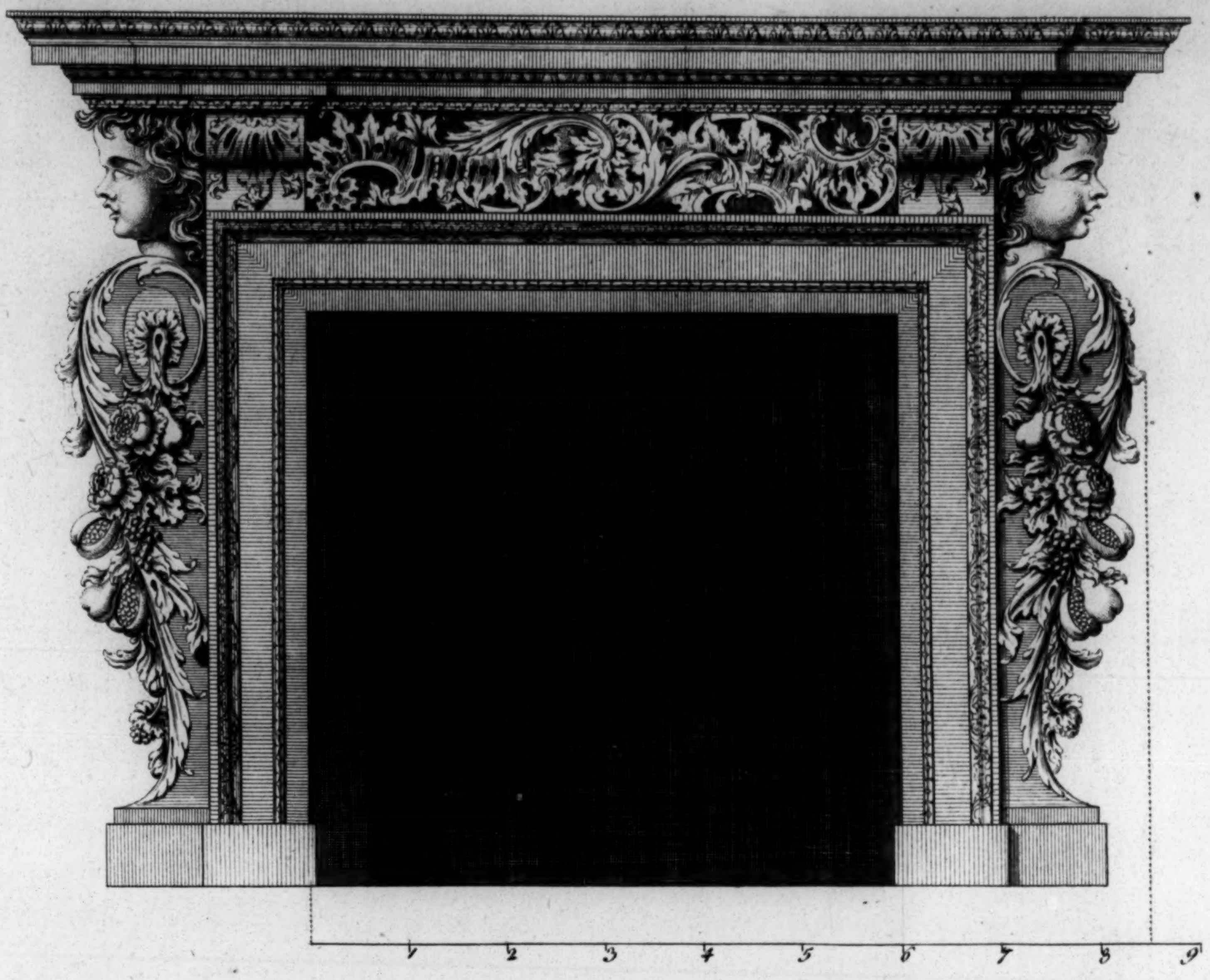
This Truss is One 5th Part of the Opening of the Chimney.

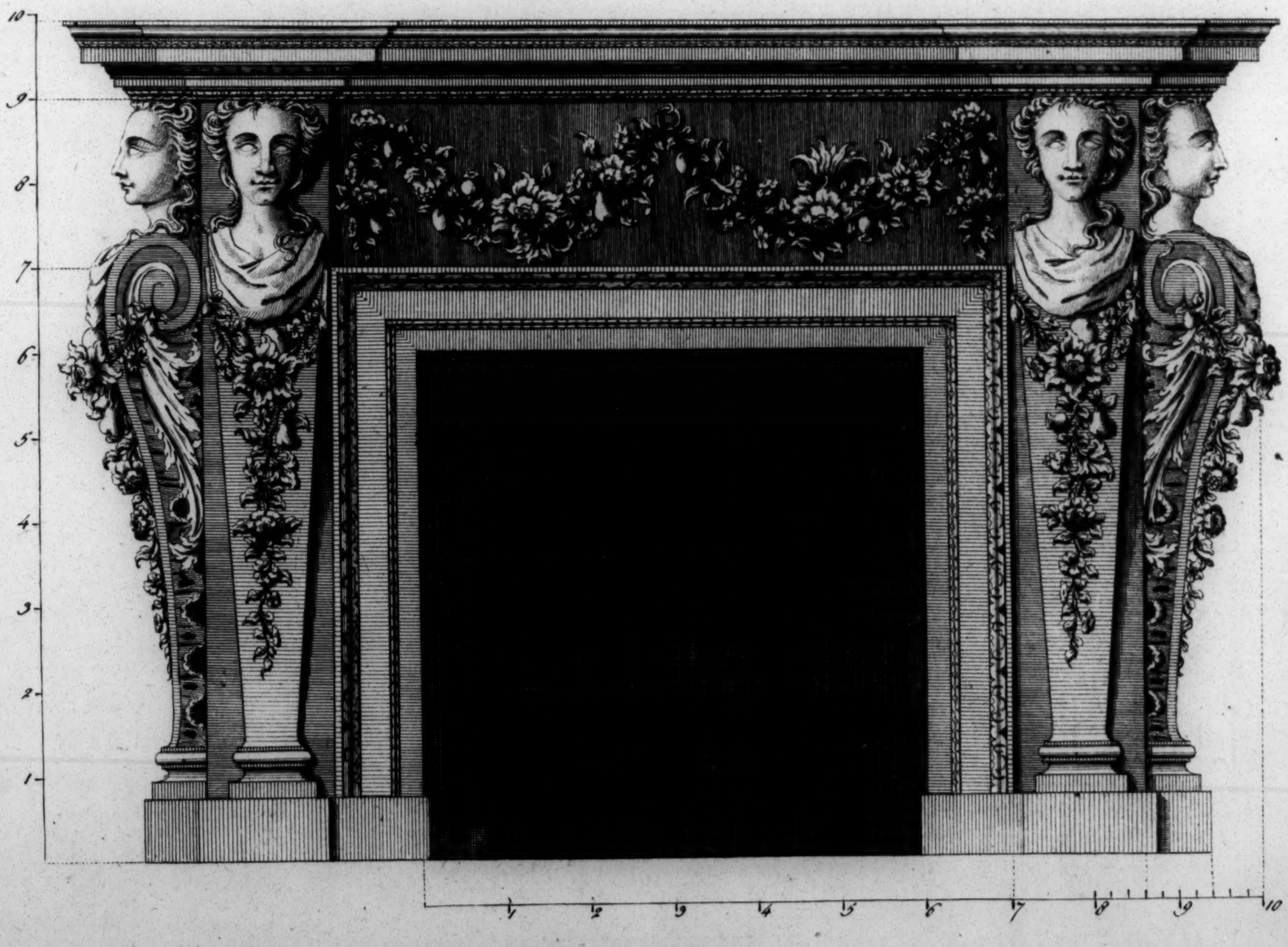

11
10
9
8
7
6
5
4
3
2
1

This Truss is two 9ths of the Opening of this Chimney

Ab: Swan in et de. *Pub: According to Act of Parliament Feby 1th 174$\frac{4}{3}$* *E Rooker sculp.*

Plate LIV



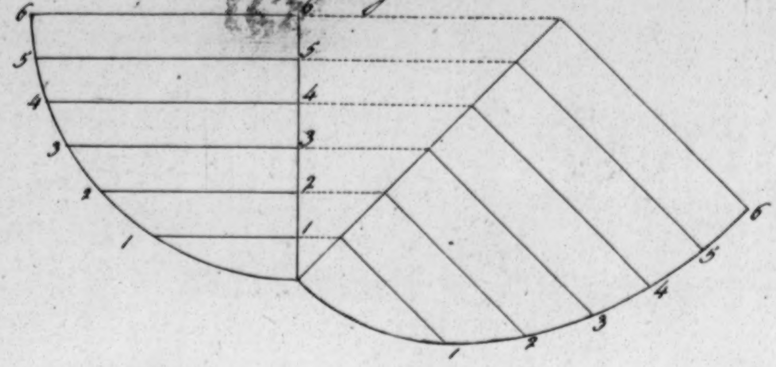


10
9
8
7
6
5
4
3
2
1
1
2
3
4
5
6
7
8
9
10

Ab. Swan in et de   Pub. According to Act of Parliament Feb. ye 7 174 4/5   Rooker sculp

Plate LV

Fig. 1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5
4
3
2
1
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1
6
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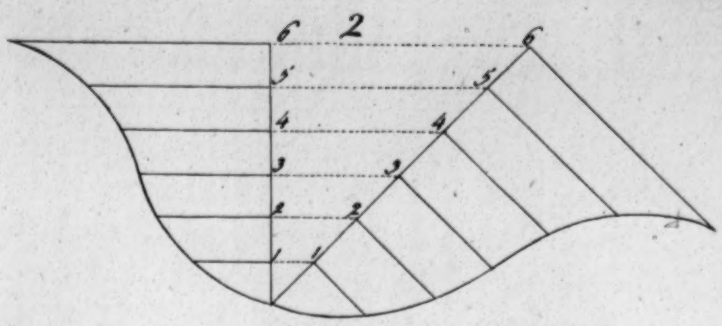
4
3
2
1

2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4
3
2
1
6
5
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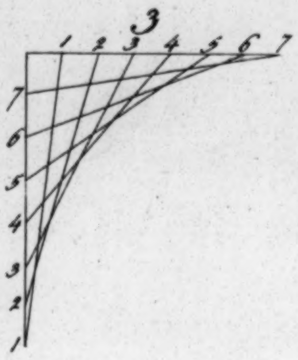
3
2
1

3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6
7
7
6
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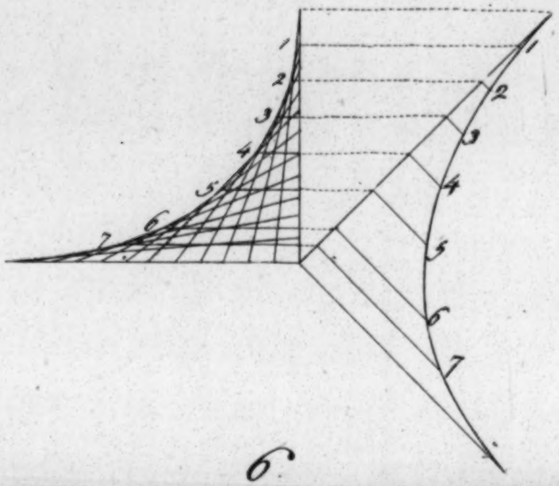
4
3
2
1

4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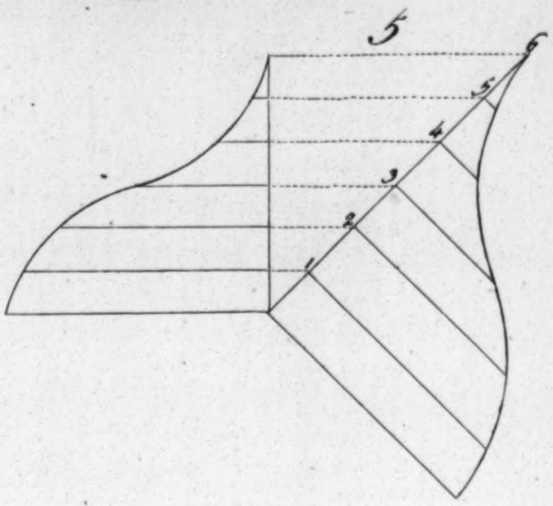
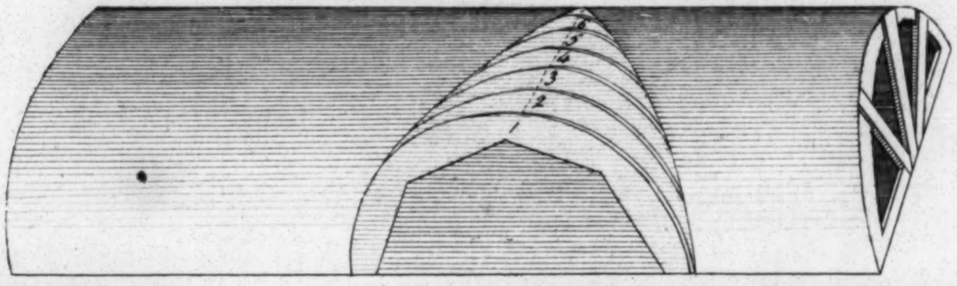
6
7
1
2
3
4
5
6
7

5



6.



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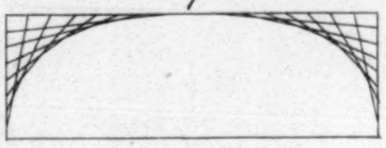
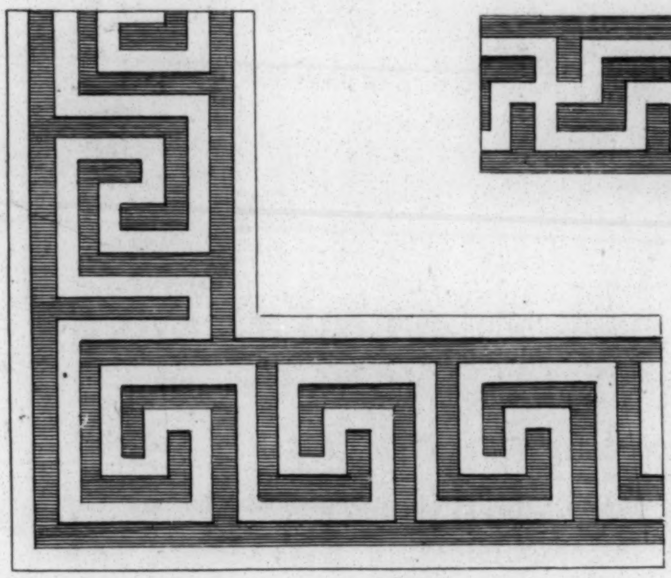
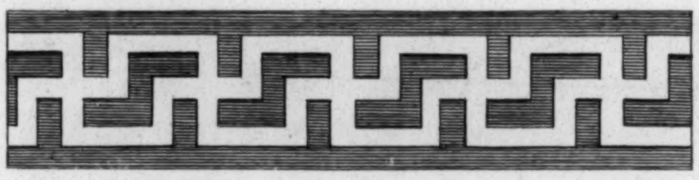
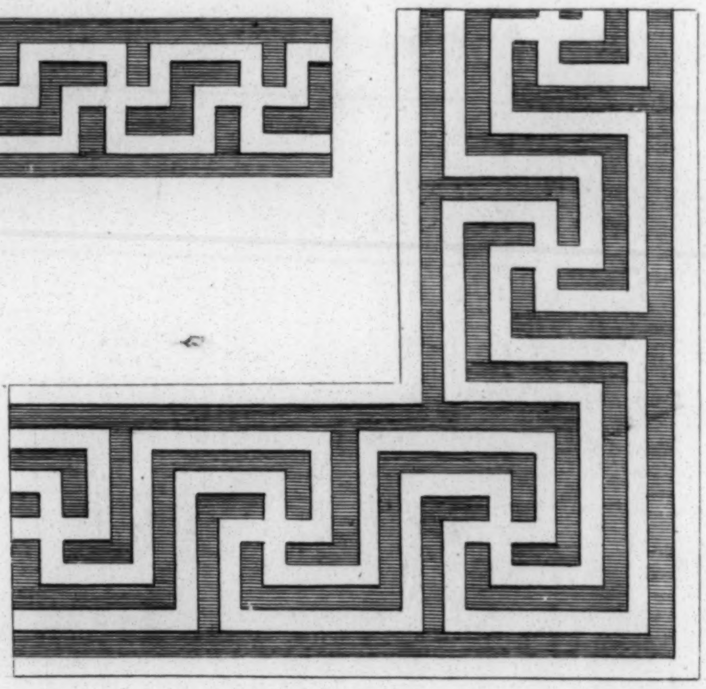
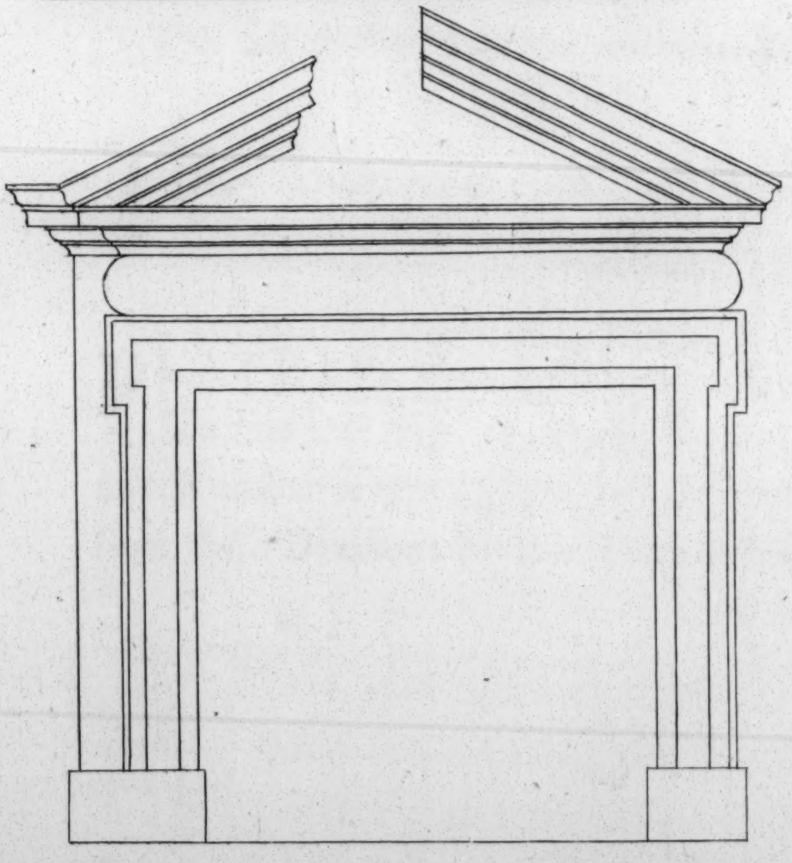
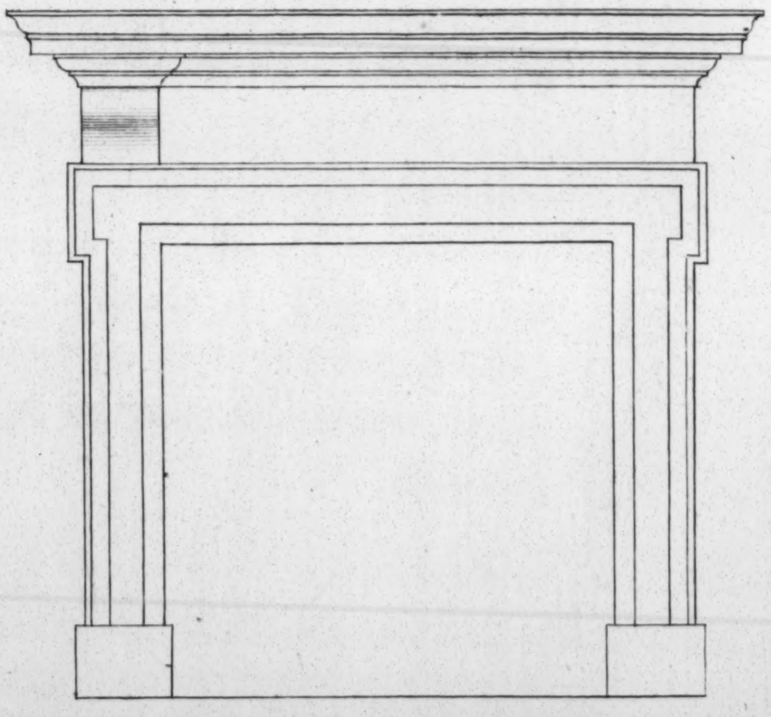












Ab: Swan in et de. Rooker sc.

Another Chimney-Piece, with a Frame and Pediment over it.

PLATE LII. The *Architrave* is here one ſixth Part of the Opening, the *Freeze* is three Fourths of the *Architrave*, and the *Truſſes* up the Side are one Fifth of the Opening.

The Width of the *Truſſes* to the Frame, is one Ninth of the whole Extent, that is perpendicularly over the *Architrave*.

You may obſerve that this, and all the foregoing Chimneys, with their *Mantlings*, (which are their *Architraves*, *Freezes*, and *Cornices*) are proper Deſigns for *Chimneys*, without the Frames over them.

Different Sorts of Chimney-Pieces, with different Truſſes.

PLATE LIII. To the lower Chimney is ſhewn a Pannel, with a *Pediment* over it. The Meaſures are expreſſed on the Plate.

Two very grand Deſigns of Chimneys.

PLATE LIV. In the upper *Deſign*, the *Architrave* and *Freeze*, are each of them one ſixth Part of the Opening; the *Truſs* is the ſame Width as the *Architrave*.

In the lower *Deſign* the Height of the *Freeze* is twice the Width of the *Architrave*.

The reſt of the Meaſures are to be ſeen in the Plate.

The Nature of Angle-Brackets, Groins, and Frets.

PLATE LV. FIG. I. Shews the Quarter of a Circle.

To find its *Hip*, or *Angle-Bracket*;——Divide its Projection into any Number of equal Parts, as here into ſix; then draw the dotted Lines from theſe Diviſions to the Diagonal-Line, or Projection of the *Angle-*

Bracket; this will divide the Projection of the Angle into the ſame Number of equal Parts; then take the Heights 1, 2, 3, 4, 5, 6, from the Ground-Line of the Quarter-Circle, and ſet them up from the Diagonal, and then will your *Hip*, or *Angle-Bracket*, anſwer that of the ſtraight Part.

FIG. II. Shews the Manner of finding the *Hip-Mould* of an *Ogee*;——Divide your *Ogee* into any Number of Parts, here into ſix as before; then take the Projection from the Upright Line, and ſet them up from the Diagonal, as in the former Figure.

FIG. V. Shews the Manner of finding the *Hip-Mould* of the ſame *Ogee*, when turned the *reverſe* Way.

FIG. III. Shews you how to trace out a *Bracket*, which riſes more than it projects;——Divide its Projection into any Number of equal Parts, as here into ſeven, and draw the Lines from 1 to 1, from 2 to 2, *&c.*

FIG. IV. Shews a *Bracket* of the ſame Height and Projection. To find its *Angle-Bracket* or *Hip*;——Divide its Projection into any Number of equal Parts, then take the Diſtances 1, 2, 3, *&c.* to 7, upon the traced *Bracket*, and ſet them from the Diagonal, to 1, 2, 3, *&c.* to 7. This is ſufficient to ſhew, that if the traced *Bracket* had been drawn in any other irregular Form, the ſame Method would do to find its *Hip*.

FIG. VII. Exhibits an Elliptic *Arch*, not riſing ſo high as a Semi-Circle.

FIG. VI. Exhibits an *Arch* boarded over; wherein the ſeveral Figures 1, 2, 3, *&c.* repreſent ſo many Ribs, or *Jack-Rafters* ſet upon the circular Body of the *Arch*, in order for another *Arch* to interſect it, where thoſe boarded over the *Groins*, are formed.

Underneath are three different Sorts of *Frets*; and two common Chimney-Pieces, each containing two different Deſigns.

PLATE LVI. Exhibits four different Sorts of *Corbels*, or *Conſoles*, for ſetting Statues or Buſts upon.

PLATE LVII. Shews ſix different Deſigns of *Shields*.

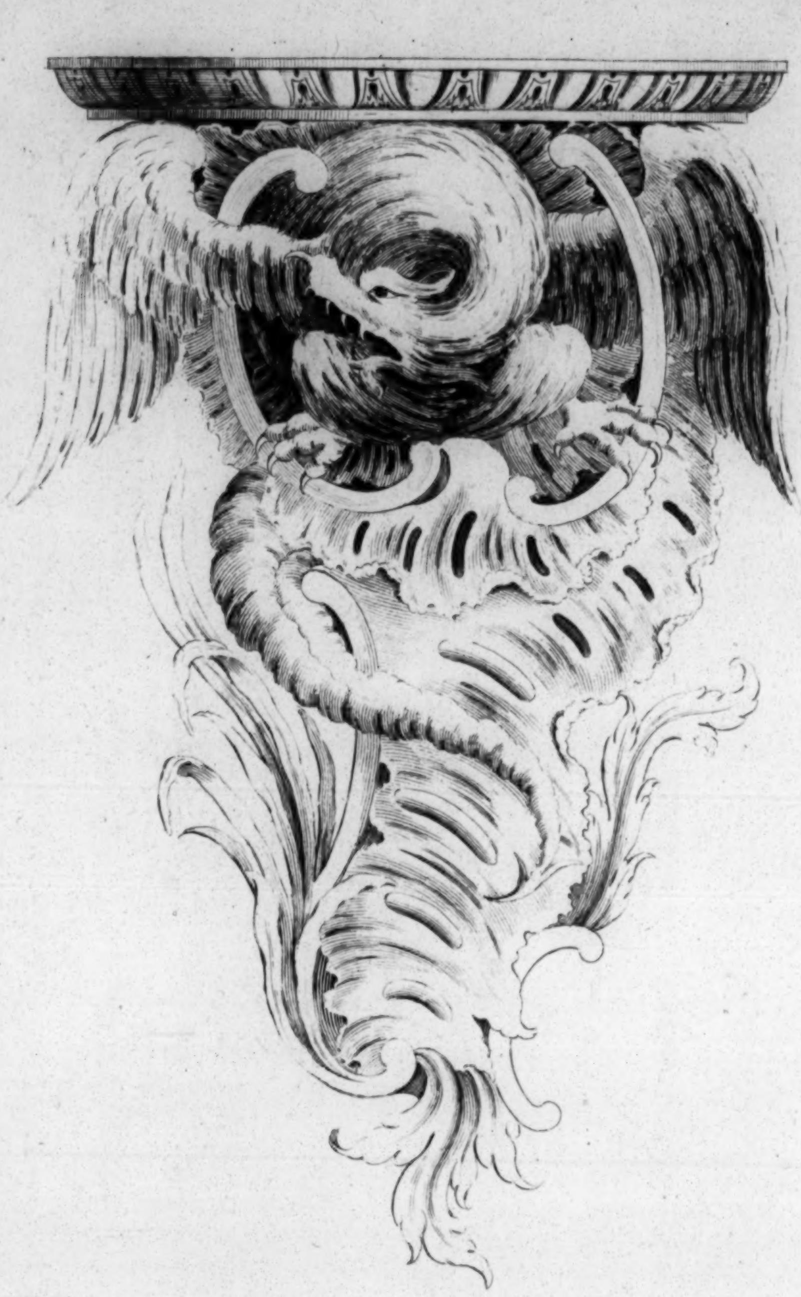
PLATE LVIII. Exhibits four other Sorts of *Shields*.

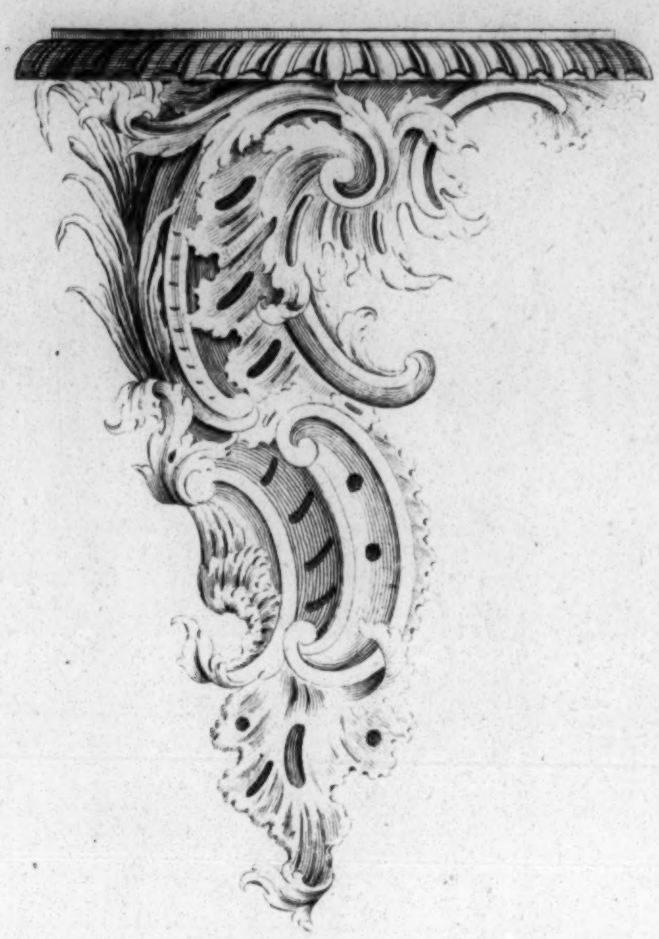
Truſſes of different Sorts.

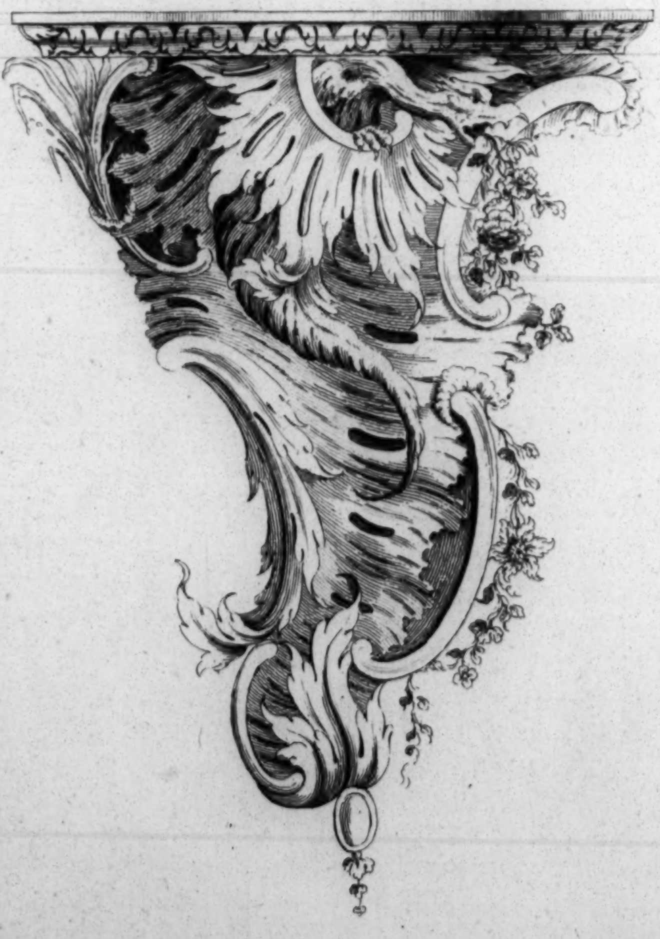
PLATE LIX. FIG. I. Shews the Form of a Truſs'd Roof, with three *King-Poſts*, that may carry ſeventy Feet, or upwards.

FIG. II. Exhibits an *M Roof*, capable of carrying as great an Extent as the former; indeed both theſe Deſigns are capable of carrying almoſt any Extent.

Plate LVI







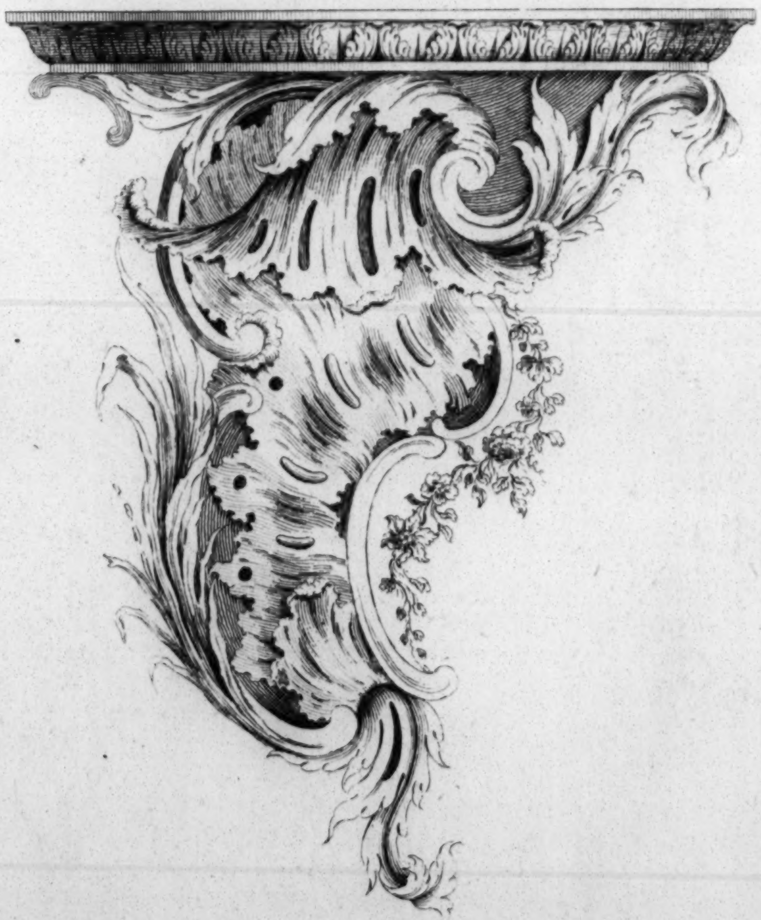


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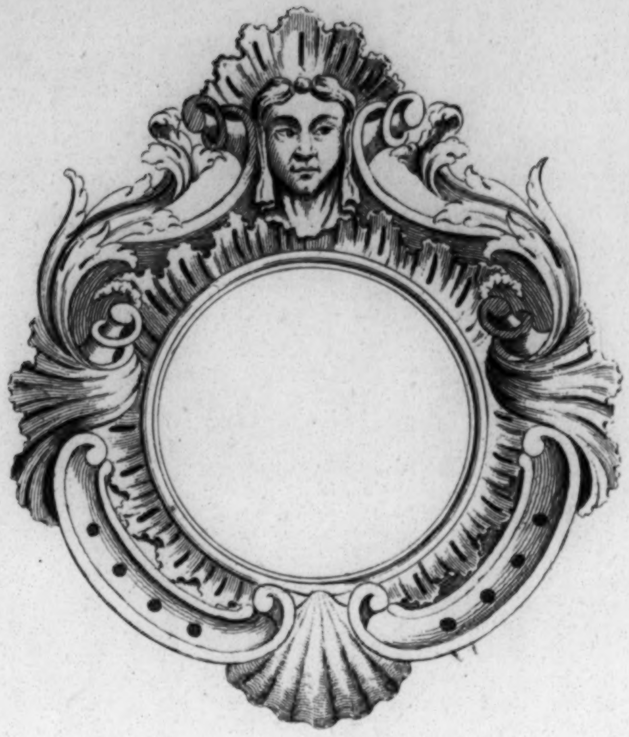
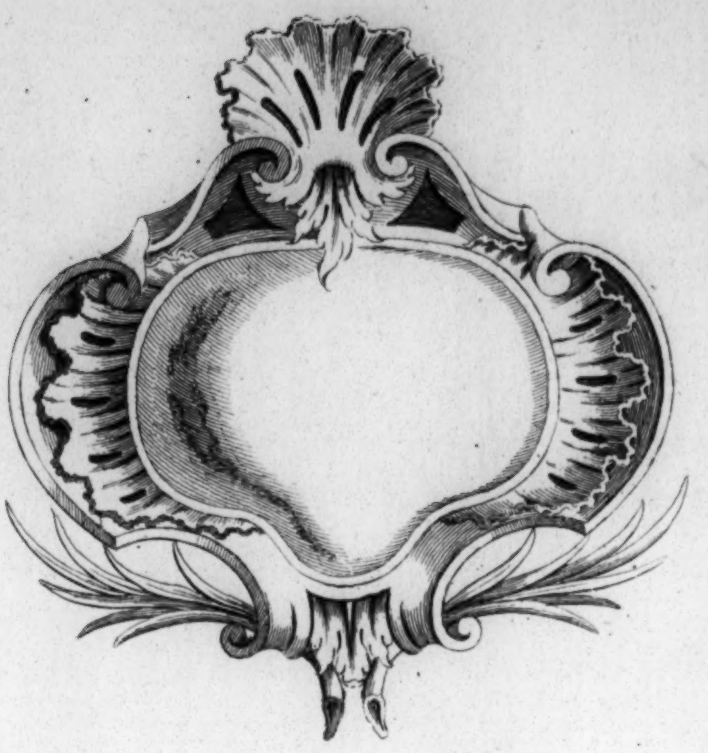
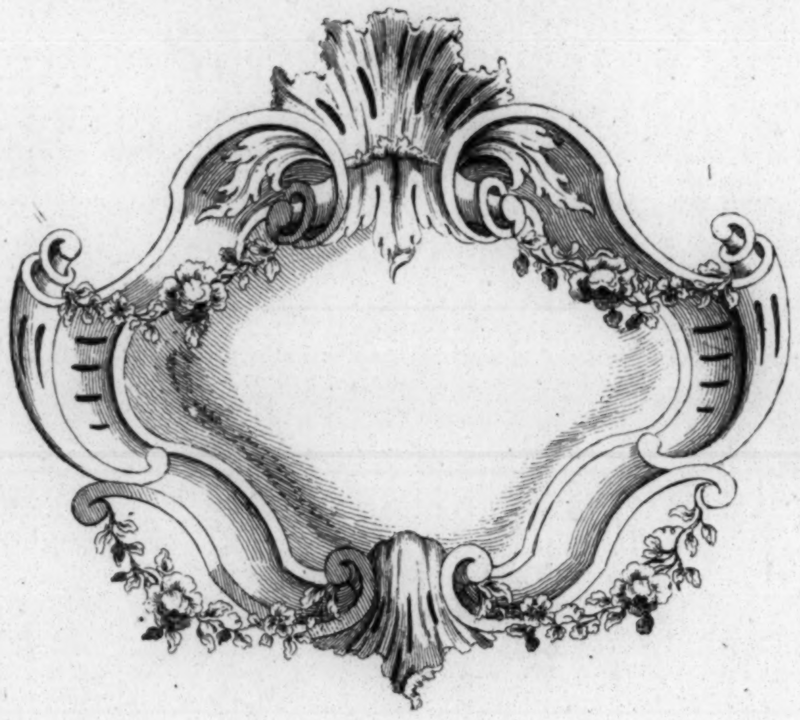
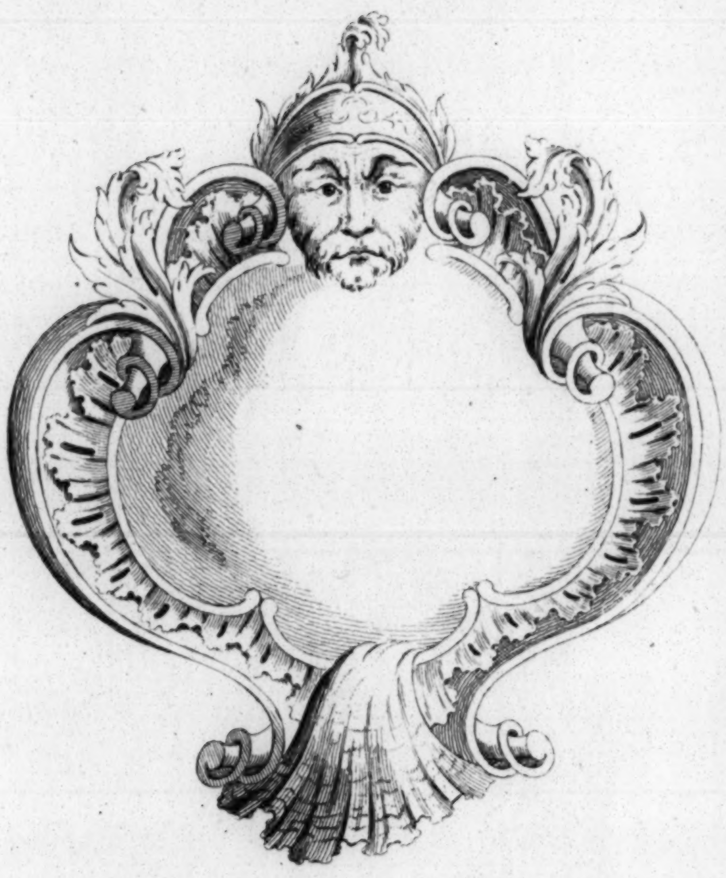
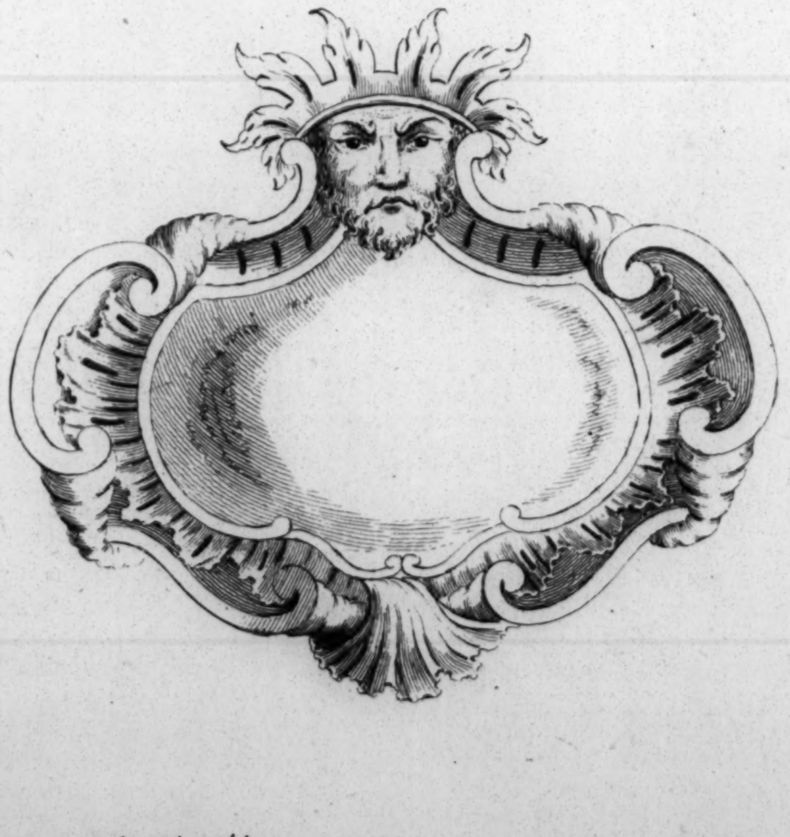
Plate LVII

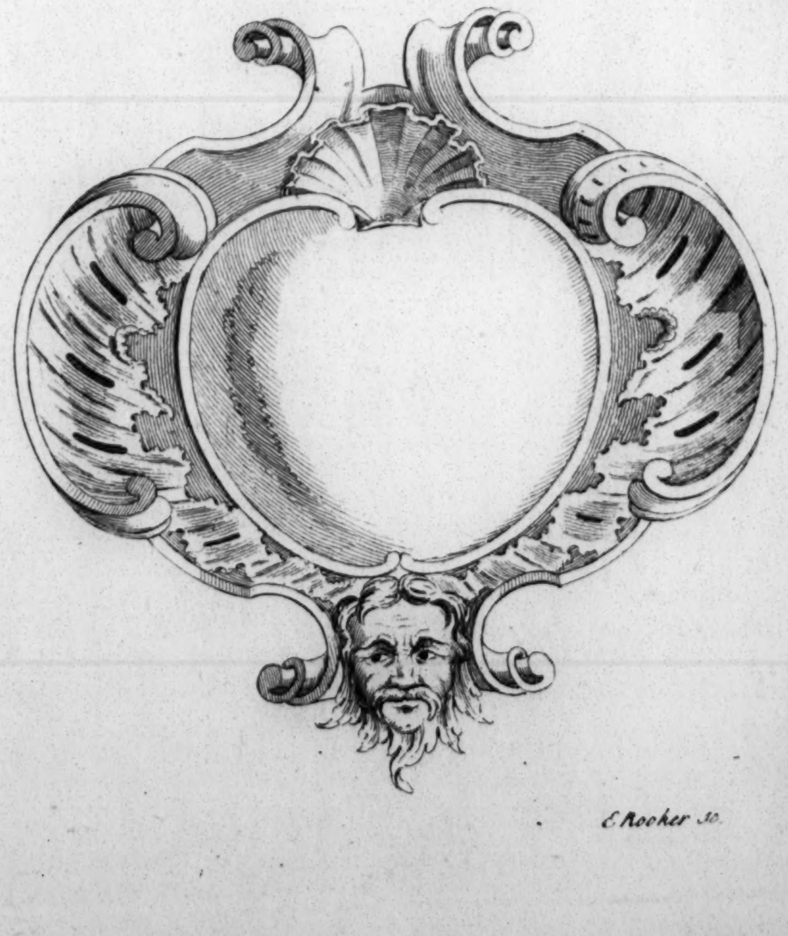








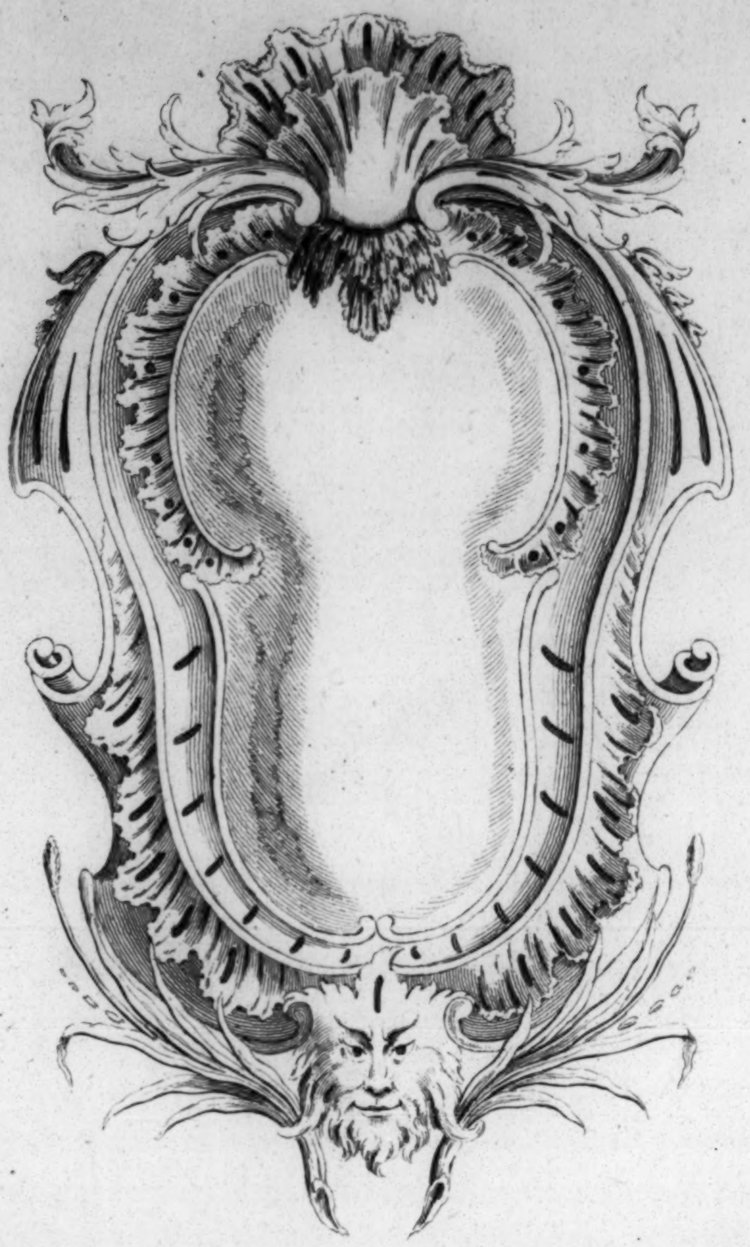


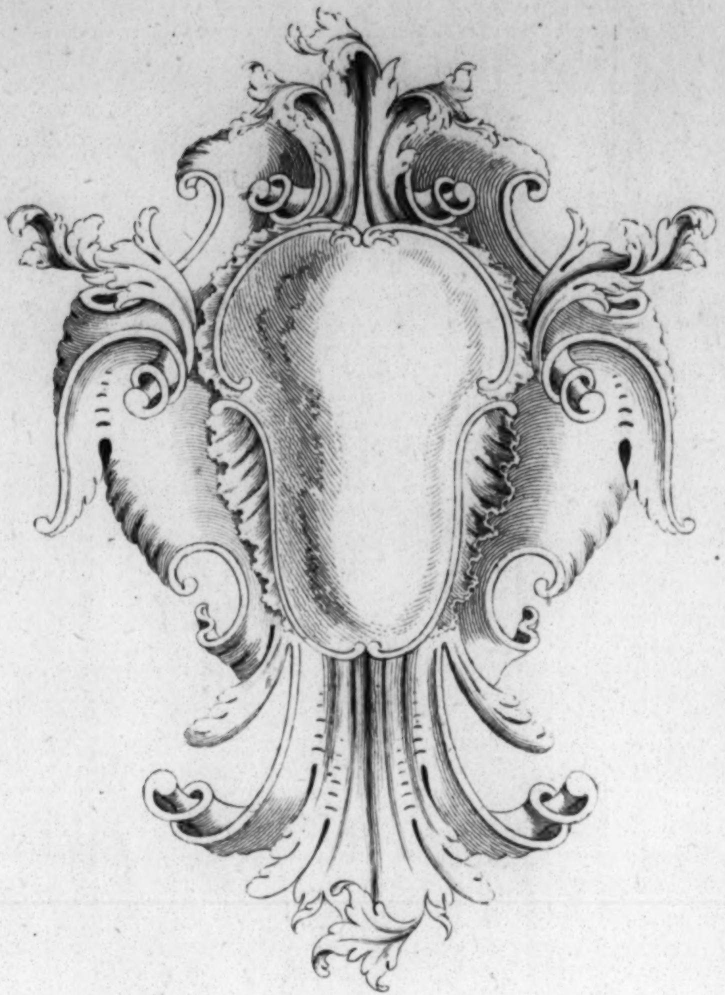


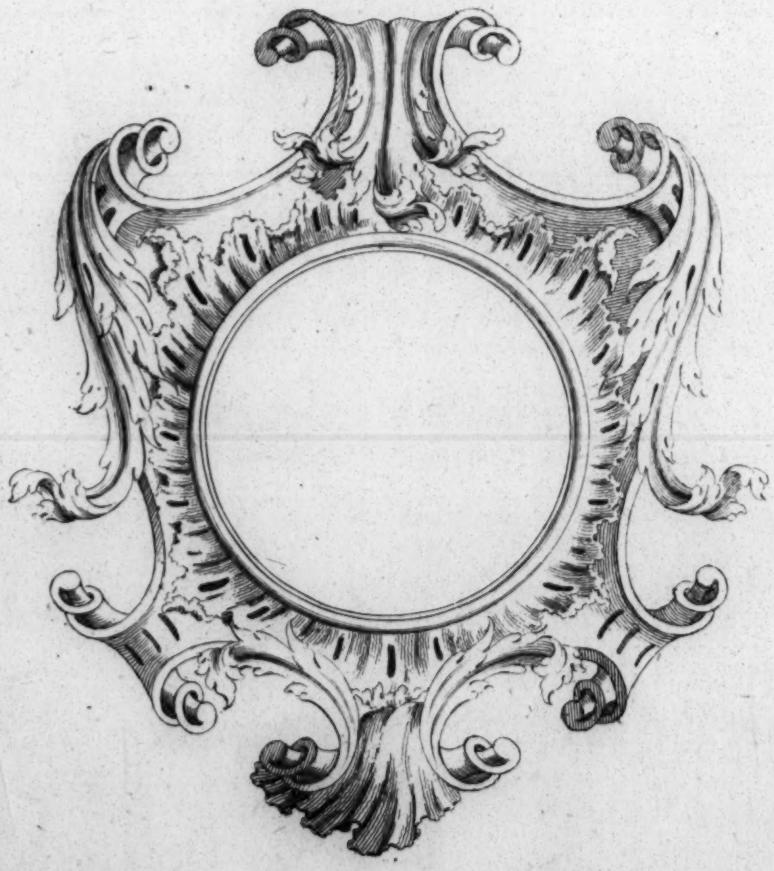
Ab. Swan in et del.

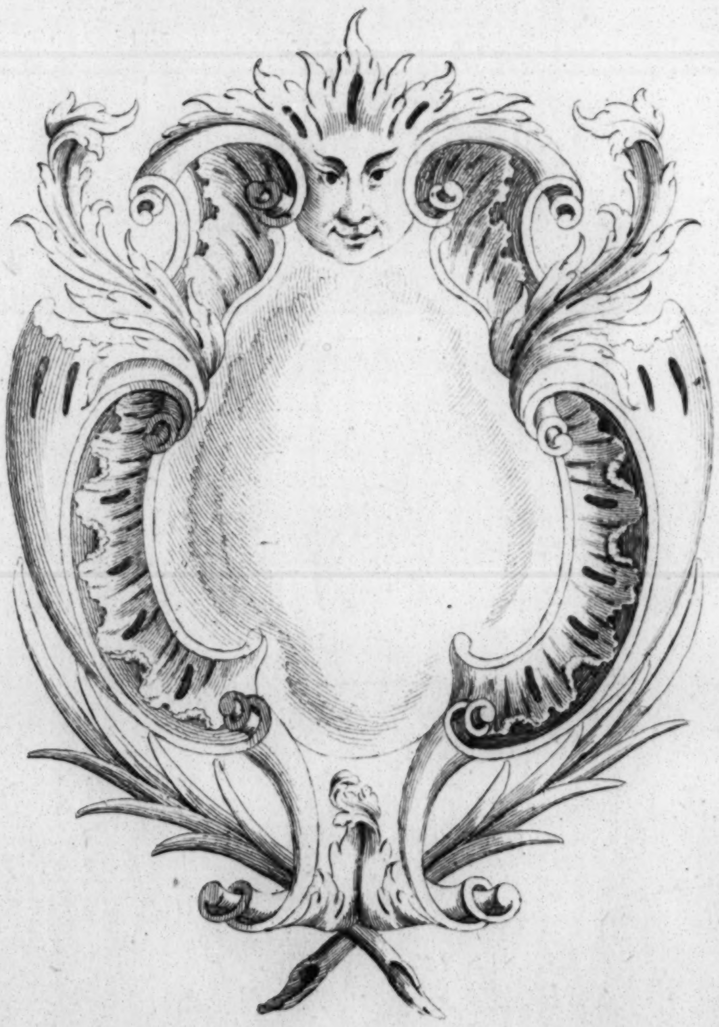
E. Rooker sc.

Plate LVIII









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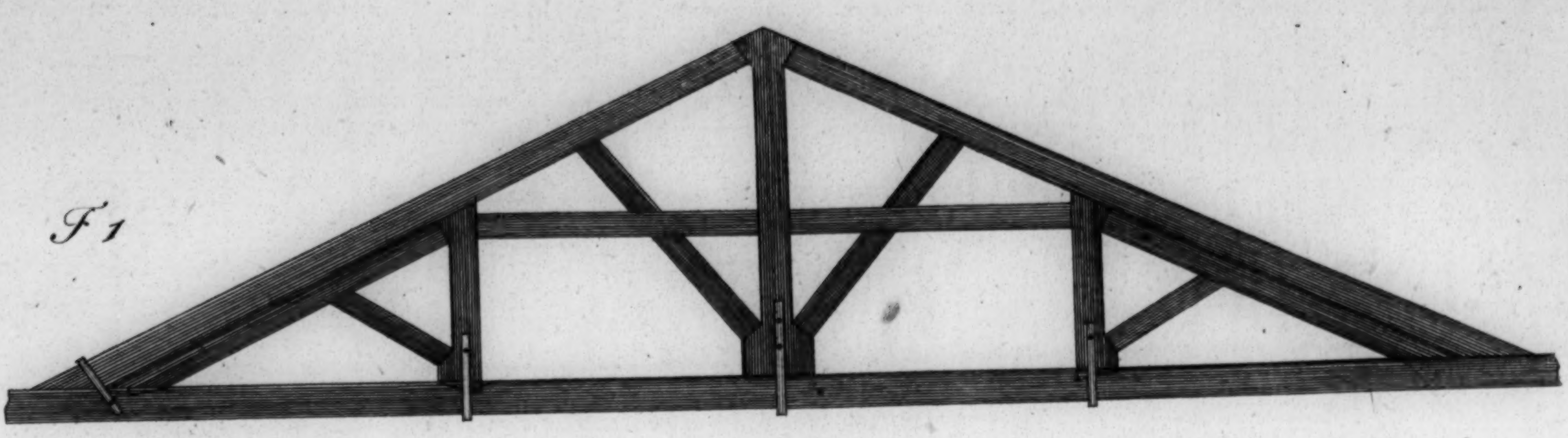

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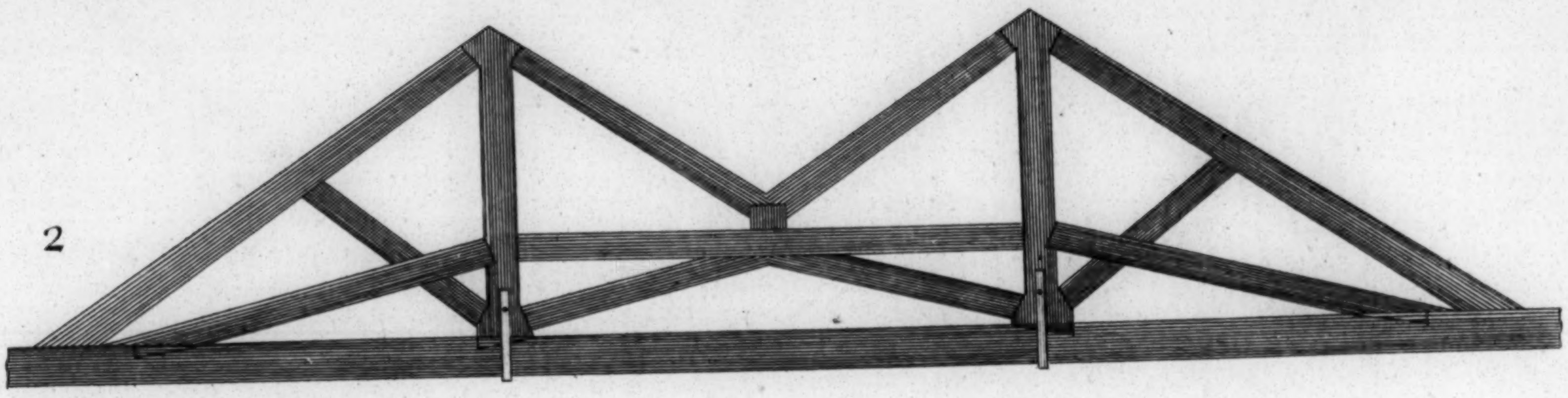

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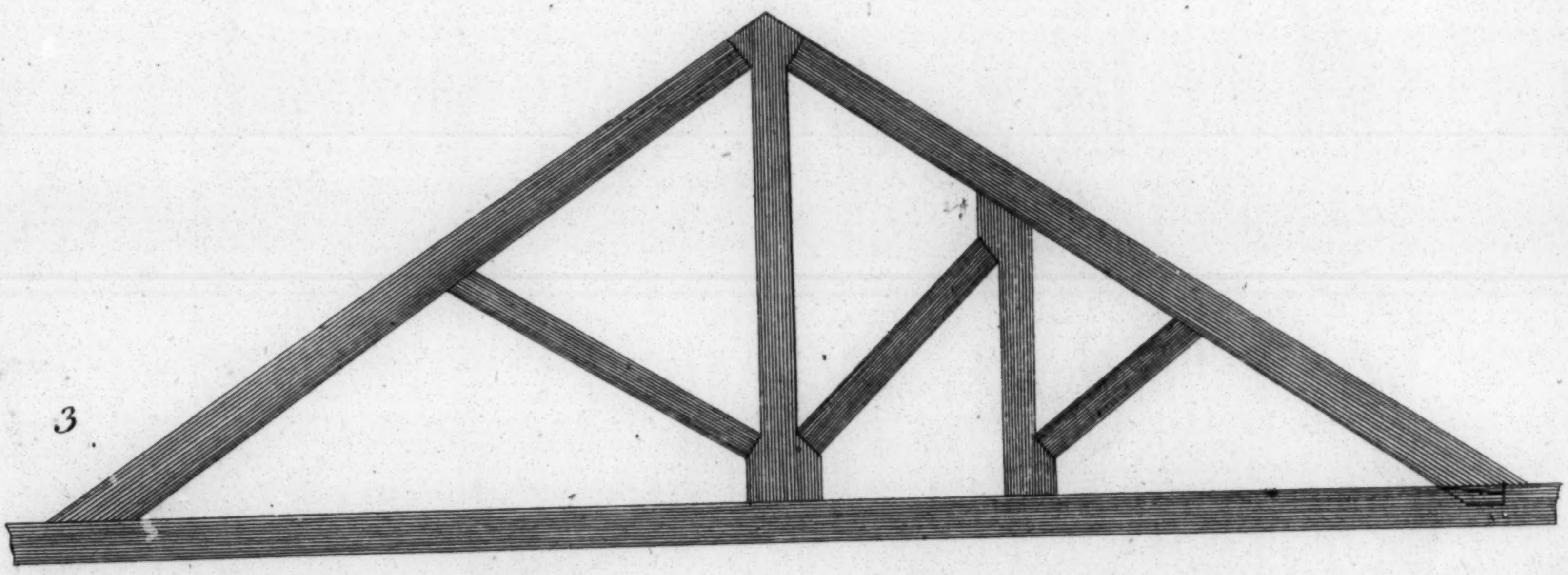

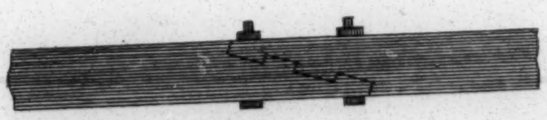

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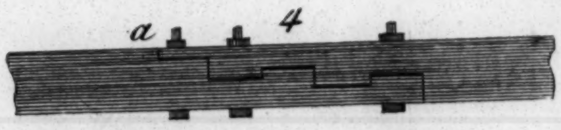

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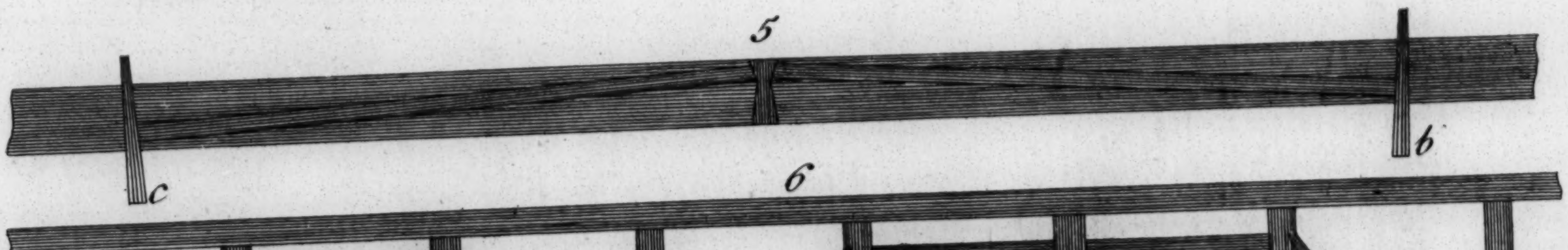

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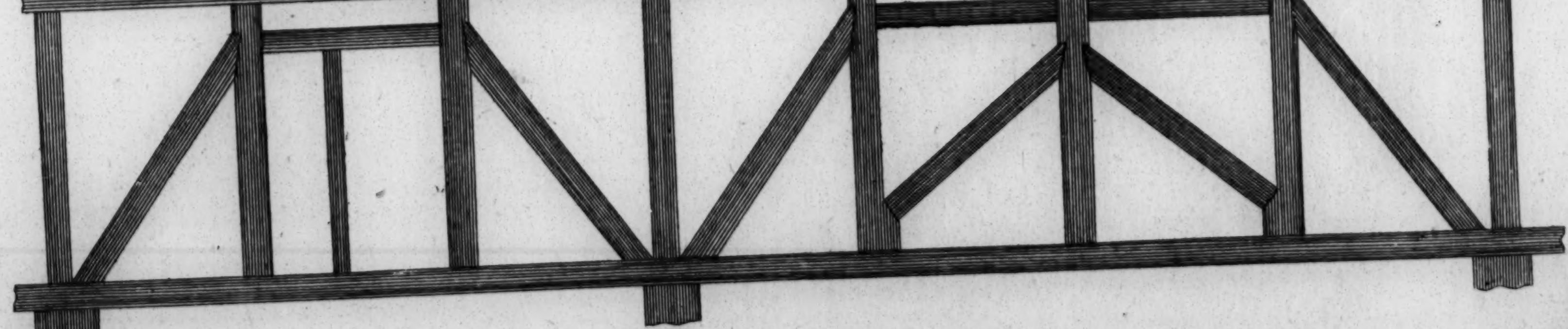

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Plate LX

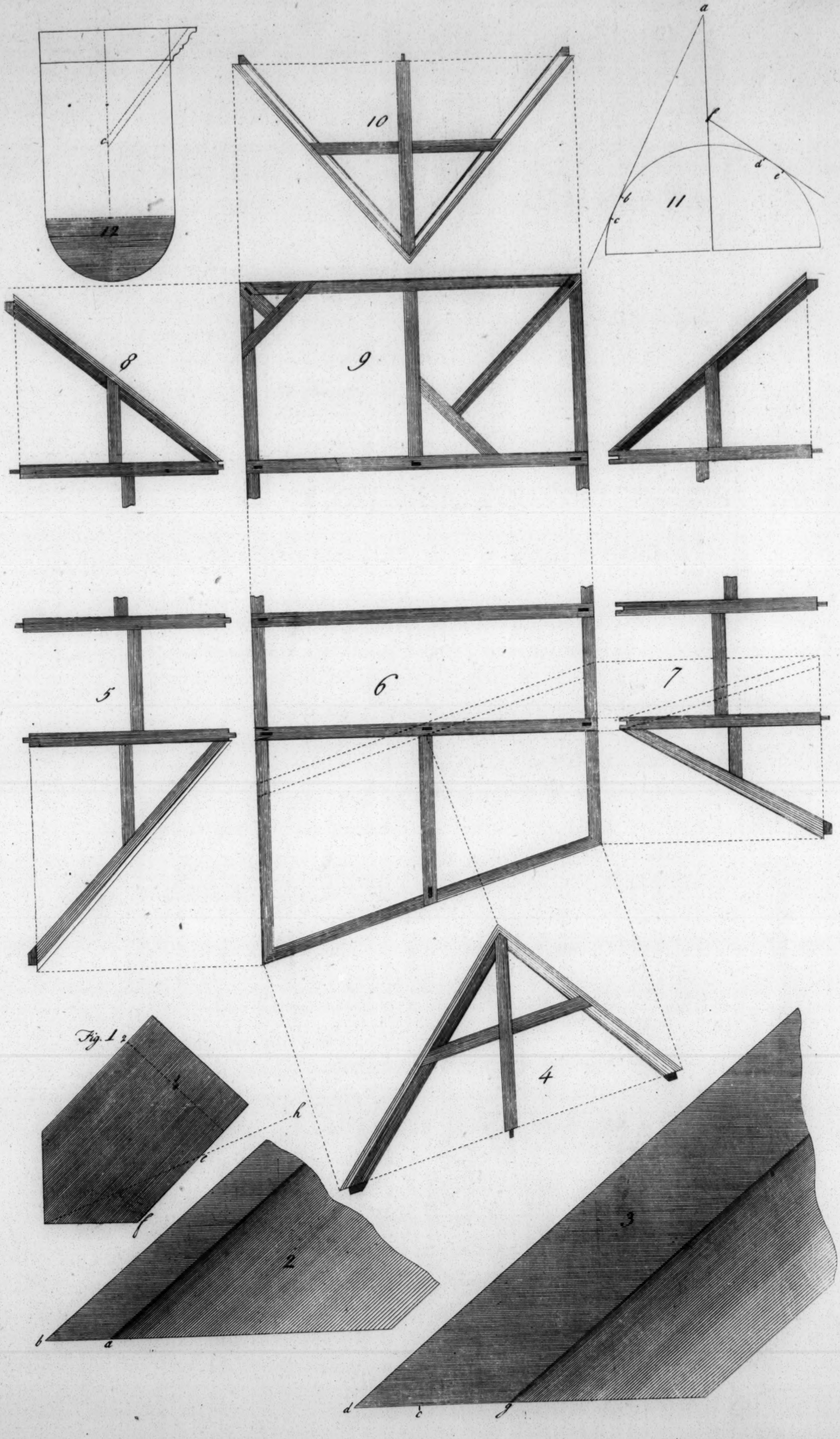
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FIG. III. Repreſents two different Sorts of *Truſſes.*

FIG. IV. Shews the Manner of piecing Timber.

Sometimes the Joint may be extended as far as *a*, with another Bolt through it.

To the Left is ſhewn a different Sort of Joint.

FIG. V. Shews the Manner of Truſſing a *Girder*.

If you leave your *Truſſes* full long, then with the Pieces *b* and *c*, you may make them as tight as you pleaſe.

FIG. VI. Repreſents the Manner of Truſſing Partitions.

The Manner of laying a Frame in Ledgment.

PLATE LX. FIG. I. Shews the Manner of *backing a Hip*.——— Divide the Thickneſs of the *Hip* into two equal Parts; then having found the Pitch of your *Hip*, as is ſhewn in FIG. II. ſet one of theſe Parts upon the Baſe-Line, from *b* to *a*; and it ſhews what Wood is to be taken off.

If the Side of the Building comes in with a *Bevel*, as the dotted Line *b*, in FIG. I. then transfer half the Thickneſs of the *Hip*, from *d* to *c*, in FIG. III. and take the Diſtance *f e*, in FIG. I. and ſet it from *c* to *g*, in FIG. III. this will ſhew how much is to be taken off the *Hip*, when the Building bevels.

FIG. IV. Shews the *Principal*, with its two *Hips* for the *Bevel-End*.

FIG. V. Shews the long *Hip*, laid out ranging with the Side of the Building.

In FIG. VI. The dotted Lines repreſent the Beam laid Parallel to the *Bevel-End*.

In FIG. VII. The dotted Lines ſhew the *Principal*, as it will appear when the Beams are laid Bevel.

FIG. VIII. IX. and X. Repreſent the Frame for the Square-End.

FIG. XI. Repreſents a circular Body.

To find the Curve, for any Lath or Margin, to be bent round this Body, parallel to its Baſe;———Let the Points *b* and *c*, repreſent the Margin which you intend to bend round; then draw a right Line thro' thoſe Points, to meet the Perpendicular, or Diameter produced as in *a*, and it gives the Length *a b*, the ſhorter, and *a c*, the longer Radius for ſtriking the Curve required. And if a Margin was to be bent round any

any other Part of this circular Body, as *d e*, draw a right Line through thoſe two Points as before, to interſect the Perpendicular, as in *f*, and it gives the Lengths *f d*, and *f e*, to ſtrike the Curve. This may be ſufficiently demonſtrated by a right Cone applied all round; or, which is the ſame Thing, if the Radius was turned upon a Spindle at *a*, it would touch the circular Body every where at an equal Diſtance from the Baſe.

FIG. XII. Shews the Method of bending a *Cornice* round any circular Body. When you have found the *Spring* of your *Cornice*, which is ſhewn at the Right-hand, let the dotted Lines be drawn parellel to the *Spring*, and where they interſect the Centre, or Middle of this Body, as in *c*, you will have the Radius to ſtrike the Curve of your *Cornice*. This may be proved in the ſame Manner as the foregoing.

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